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International Journal of Dravidian Linguistics

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PRESIDENTIAL ADDRESS*

K. MEENAKSHI
Pune

Let me, at the outset; take this opportunity to express my heartfelt thanks to Prof. V. I. Subramoniam and the members of the Selection Committee for electing me as the President of Dravidian Linguistics Association for the year 2002 - 2003. I feel greatly honored by this gesture. When I was informed of the selection committee's decision, I hesitated for a while to send an acceptance letter, thinking whether I deserve such an honor, since several eminent linguists had been President of this august assembly in the past. However, I accepted this with all humility, the reason for which is twofold. Firstly, because I have a high regard and respect for Prof. V. I. Subramoniam. It wouldn't be an exaggeration if I say that the development of ISDL to the extent, it is today, is all due to him only. His younger colleagues of course cooperated with him in all his efforts. Though the name ISDL, DLA, IJDL etc. have the name Dravidian, Professor and his colleagues are aware of the fact that the Dravidian as a genetic stock does not stand in isolation. When we take account of the research papers published in IJDL through the years, one can notice the articles on Indo-European, Indo- Aryan, Dravidian, Munda, Tribal languages, the great grammarians of India, modern linguistics, and so on. ISDL's publications also include many of these topics. These publications stand as testimony to Professor's broad outlook.

The second reason being that I was informed that I would be the first woman President. Hence, I accepted this with the hope that many more young women Presidents will succeed me. Though some discipline does elect women as President, DLA has elected me as the first woman President. I consider this as an honor to all women.

It is customary to say a few words in the form of the Presidential address by the President of the conference. I have chosen a topic which is much discussed for this, viz., the areal linguistics / substratum theory. I shall try my best to give a short speech so that I will not try your patience.

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* At the 31st All India Conference of Dravidian Linguists at Kanchipuram, Chennai on 19.6.2003.

Genetic classification of languages

Comparativists classify the languages into families such as Indo-European, Indo-Aryan, Dravidian and so on. When we say that two languages are related to each other genetically we mean that we consider them to be historical continuation of a single earlier language spoken among members of an earlier speech community. In order to demonstrate such relationship, we must show the shared inheritance between the languages in phonetic semantic resemblances in their vocabularies so as to eliminate the possibilities of chance resemblance and diffusion of vocabularies. On the basis of the correspondences found in their sister languages for instance, kinship terms, a parent language is posited which they called proto-language such as Proto-Indo-European, Proto-Dravidian, Proto-Aryan etc. Proto-Indo-European is identified first on the correspondences found in the sister languages viz. Sanskrit, Latin, Greek, Germanic etc. By applying the same principle all the languages of the world have been grouped into different families. It may be noted that by Indo-Aryan, Dravidian we mean a speech community, which speak a language belonging to that family of languages and not a race.

What is the relevance of genetic classification when we find so many similarities in the existing languages? Typological similarities may be found in the languages; however, they seem to be superficial and differences in the structure will not be explained by the typological classification in such cases, only genetic classification of grouping languages into families becomes relevant. For instance there are a number of universal features. If we take the category of gender, it is found in many languages, but the usage of gender category differs from one genetic stock to another. Take for instance, there are threefold classification of genders, viz. masculine, feminine and neuter, in both Tamil and Sanskrit. Gender in Tamil has been decided by the verbal ending which co-occurs with the noun as *-an̲, -aḷ, -atu* in the third person singular, whereas the gender in Sanskrit is fixed by the grammarians, as the verb which co-occurs with noun will be the same for all the three genders, i.e. such kind of cases are in plenty and they necessitate the genetic classification as Indo-Aryan, Dravidian etc.

Linguistic Convergence / Diffusion of features

Languages tend to converge gradually in structure and lexical items with their neighboring languages. This process is complementary to that of their gradual divergence from their common ancestor. The direction of change is towards the structure of the neighboring language. Linguistic convergence can take place when there is a close contact between the linguistic groups over a long period and such contact is possible in various contexts such as invasion and subsequent conquest, migration, trade relations and so on. It is generally believed that in such situations, barriers of a cultural and social nature decrease gradually, such a contact between linguistic groups leads to the formation of linguistic areas - an area which includes language belonging to more than one family but showing traits in common which are found to belong to the other members of (at least) one of the families. In other words, the resemblances between linguistic groups which are the result of contact rather than common origin, such as numeral classifiers in Indo-Aryan languages, which clearly originated at the eastern end of the sub-continents are typically associated with languages of the Sino-Tibetan groups.

The Indian linguistic area is one of the larger areas involving hundreds of languages from four major language families - Indo-Aryan (a branch of Indo-European), Dravidian, Munda (Austro-Asiatic) and Tibeto-Burman (Sino-Tibetan). Of these, the first two have been the major contributors of the development of Indian culture and society and rich data of historical depth are available from these for the study of convergence both linguistic and cultural.

A number of linguistic features have been identified as areal features by linguists. To quote a few features phonologically, the retroflex consonants are commonly shared by almost all languages spoken in the sub-continent and it was said that this linguistic trait was original to Dravidian and a borrowal in Indo-Aryan. The introduction of the verbal category of gerunds (absolutives, verbal particle) of e.g. *hatvā* for older *jaghanvan* as a morphological feature. Placement of *iti* a quotative marker has been identified as shared feature in syntax. The last one being the loan words. We find a large number of words from the ecological milieu, being borrowed from the indigenous people. These shared features are believed to have found right from the early stages of Indo-Aryan such shared features keep on increasing when we come to the modern period irrespective of their family affiliation. This led some scholars to the belief that the number of linguistic features binding Indo-Aryan with Indo-European and modern Dravidian with Proto-Dravidian is gradually diminishing and it is claimed that convergence of this sort may actually eradicate families and result in the formation of new relationships and a new language family, which will be neither Indo-Aryan nor Dravidian.

Such typological similarities are gradual developments, the beginning of which can be traced back to the period when these linguistic groups came in contact with each other for the first time, in the north-west India, when the Indo-Aryan speech community migrated into the north west. The period of the early contact is said to be roughly about 1500 B.C. This period more or less coincides with the late Harappan stage.

Some linguists are of the opinion that their findings should be correlated with the findings of the archaeologists and historians as the language as the means of communication is part and parcel of their culture. Archaeologists make inferences from the distribution of pottery, their nature of burial of the dead, and so on i.e. they make inferences about material culture of the people who were believed to have lived in that area. Therefore, we will start our discussion from the oldest civilization of the Indian sub continent, viz., Indus Valley / Harappan civilization.

Indus Valley / Harappan civilization is said to have represented in three phases: Early phase 3000-2600 B.C. Mature phase 2600-1900 B.C. and late Harappan phase after 1900 B.C. Indus civilization was mainly based on agriculture and consisted of urban population. The citadels of the elite were physically separated from that of the residential area, which consisted of large familial houses with well-developed civic amenities. Their sophisticated urbanism is marked by the layouts of the cities and their drainage system. They had long distance trade contact. They were also familiar with writing system, though their script is yet to be deciphered. The religion of the Indus Valley / Harappan civilization is thought to be the worship of mother goddess.

There have been various attempts to decipher the Indus script as Proto-Dravidian and Proto-Indo-Aryan and accordingly they inferred the culture of the people who lived there. These attempts may be continued till a bilingual inscription in that area is unearthed. This civilization anyway was thought to have sudden birth and sudden end.

The society, culture and religion are inferred from the cultural terms used by the speakers of sister languages as found in the correspondences as the proto language of the people. According to them, the Proto-Indo-Europeans lived in a temperate climate. They domesticated the horses, which were used for riding and driving the carts. The fire cult and soma sacrifices prevailed among the speakers of Indo-European languages spoken in Iran and the Indian sub continent. However animal sacrifice and horse sacrifice seem to have commonly found among the Indo-Europeans speech community. Proto-Indo-European society seems to be patrilineal and male dominated.

The Rg Veda represents the earliest text of the Indo-Aryan speech community. The early Vedic people were primarily pastoral; cattle rearing was their central concern. Their society was non-urban; they domesticated horses and used them to drive their chariots. They performed horse sacrifice. Writing was unknown to the early Vedic people and the Vedas were transmitted orally. We find references to the male gods.

Several historians came to the conclusion from these that the Harappan civilization and Rg Vedic society represent entirely two different kinds of societies. They also point out when the early Vedic people migrated to the north-western part of India, they encountered a native population which had a culture different from their own which is indicated by the words such as *mrdhravāc* of 'indistinct speech', *an-as* 'mouthless' or *a-nās* 'flat nosed', *avrata* 'not performing sacrifice' and so on. Some of the words used by the migrating community in the initial stages show their social attitude towards the non- Aryan speech community.

Ancient Indian Composite culture seems to have evolved from recruiting members of non-Aryan speech community into the Aryan Speech community. Indo-Aryan speech community with inherited Indo-European idea of patrilineality thinks a son born of a *brāhmaṇa* father is considered as a *brāhmaṇa*, without the identity of the mother even if the mother belonged to other than a *brāhmaṇa* caste. The best illustration would be the case of *Vyāsa*. *Vyāsa* was considered a *brāhmaṇa* because his father named *Parāsara* is a *brāhmaṇa*, whereas *Vicitravīrya* the son of Santanu is a *kṣatriya* by caste as Santanu was a *kṣatriya* king. The mother viz., *Matsyagandhā* a fisher-woman is the mother of both *Vyāsa* and *Vicitravīrya*. *Matsyagandhā* is supposed to be the daughter of non-Aryan (possibly Austric) chief of a fisher folk and his father *Parāsara* recognized as a *brāhmaṇa*, his father Saktri is a *brāhmaṇa* while his mother Adrsyanti is non-Aryan (*candāla*) woman, and *Vyāsa*, himself was called *kṛṣṇa* 'black' because of his non-Aryan colour. Hence we may say *Vyāsa* is three fourths non-Aryan.

We get evidences to social mobility (upward and downward) also right from the later Vedic texts. These instances make it clear that the society consisting of Aryan and non-Aryan speech community started living in symbiotic relationship unlike the earlier one.

When two languages come into contact, people speaking one of them do not immediately abandon their own and adopt the language of the other. We assume that the native population became bilingual for a time speaking their own language and adopting that of the Aryan speech; normally social context determines which language is spoken. For example, the natives might have spoken their own language at home but sacrificial and other activities, they would have adopted the language of Aryan speech community; if the latter is employed in more and more different contexts, it will eventually lead to the death of the native's language, and it seems to have happened in the case of some non-Aryan languages which are believed to have been spoken in north India and became non-existent excepting in some pockets such as Brahui, Gondi, Kurux, Munda etc.

Bilingualism is rather induced when the context of speech requires the use of new language, if one wishes to obtain better access to status, ritual or security. During the later period, we see Sanskrit language being eclipsed by the Prakrit dialects, as the then rulers and the religious heads patronized Prakrit language. It appears some such thing might have happened in earlier period as well. It is believed that the state's coercion is a prerequisite for the societal bilingualism. Though we may not be in a position to substantiate it with evidences at the moment acceptance of the migrant's language and culture, as prestigious itself establishes this fact. When we move on to later period, we get ample evidence for this intermingling in culture for instance, the Dravidian kinship terms.

The presence of Munda loanwords in the Rg Veda shows the existence of Munda-speakers during that period in north western part of the sub continent. Similarly, some agricultural terms employed in later period and were not traceable to any existing language families. Therefore we are met with a situation in which we find Para-Munda, Dravidian, Munda and some other unknown language family are the candidates for the languages spoken in the area when the Indo-Aryan speech community migrated to the north west of the Indian sub-continent.

I have placed before you, one of the prevailing views, viz., the intermingling of the Aryan speech community with non-Aryan speech community when the former migrated to the Indian sub-continent and resulting in composite culture, bilingualism, areal features and so on. There are scholars who express the view that all languages which are spoken in the Indian sub-continent are indigenous only.

Thanking the organizers of this conference for giving me an opportunity to share my thoughts on the subject and also the audience for their patience, I conclude this.

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International Journal of Dravidian Linguistics

SOME NEW DRAVIDIAN ETYMOLOGIES FOR SANSKRIT WORDS

STEPHAN HILLYER LEVITT
Flushing, New York

Abstract

This paper argues that Sanskrit borrowed forms from Dravidian which end in **-ḷ**, *to which a suffix* **-nt-** *had been added. This suffix can be reconstructed for Proto-Dravidian. It may not always be reflected, however, for the forms in question for extant Dravidian material. By Old Tamil laws of euphonic combination,* **-l + -nt- > -n̲r̲- [nd̲r̲]**, *PDr.* ***-nt̲-**. *The data would appear to indicate that this euphonic combination followed the development of the conjunct in Dravidian languages. This provides a phonological basis for what H. W. Bailey and Thomas Burrow have referred to as "spontaneous cerebralization" for forms with* **ṇḍ**, *as well as provides another explanation of many of these forms which have remained resistant to etymology according to Burrow. Indicated is that early Sanskrit was borrowing forms that were specifically North Dravidian. Also given is a listing of forms which indicate within Sanskrit that Sanskrit was borrowing forms ending in* **-l** *to which a suffix* **-ṇt-** *had been added. The main forms treated in this paper are Skt.* **kuṇḍṛṇācī** *'house lizard'; Skt..* **kola** *'hog',* **kroḍa** *'hog',* **kroḍī** *'sow'; Skt.* **gundrā, guṇḍrā** *'reeds, bulrushes and sedges, particularly Cyperus'; Skt.* **caṇḍā**, *°ī 'hot, ardent with passion, angry, ... fierce, cruel, ... name of the goddess* **Durgā, caṇḍatā** *'warmth, pungency'; Skt.* **caṇḍāta** *'Nerium odorum'; Skt.* **puṇḍārīka** *'lotus, white lotus'; Skt.* **pogaṇḍa** *'not full grown, young, a boy, ... deformed' (***apogaṇḍa***),* **paugaṇḍa** *'boyhood, boyish'.*

In 1980, as a result of my work on Sanskrit *-ndr-* and Dravidian, I published a paper pointing out the remarkable lexical concord between Skt.√*mand/mad* and its derivatives, and certain sets of Dravidian etyma (Stephan Hillyer Levitt 1980). These connections allowed us to see from where meanings carried by the derivatives but not by the finite root were coming, and thereby allowed us to explain otherwise unexplainable "semantic extensions". My conclusion was that Dravidian etyma had merged with an original Indo-European root and had taken over its semantic content. Further, merger would have had to have taken place at a time prior to the composition of the *Ṛgveda*. Note that F. B. J. Kuiper (1967: 97) previously has opined that "the period between the arrival of the Indo-Aryans in the subcontinent and the composition of the oldest Vedic hymns must have been much longer than was previously thought".

The correspondences I proposed had resulted from an hypothesis that Sanskrit borrowed from Dravidian forms which ended with *-l* but to which a Dravidian suffix *-nt-* had been added with euphonic combination. The existence of such a suffix is wide enough in Dravidian that it, for example, can be reconstructed for Proto-Dravidian. See regarding this Bhadriraju Krishnamurti (1961: 136-37, 168-70). There is no semantic import determinable for such derivative suffixes on a pan-Dravidian basis. The result of the euphonic combination would be *-nṟ-* by Old Tamil rules of euphonic combination, and by example from Old Tamil, literary Tamil and modern formal Tamil (**-nṯ-* in Proto-Dravidian). This consonant cluster as preserved in literary Tamil and modern formal Tamil is pronounced by speakers of Brahman and non-Brahman dialects whom I have heard as *-ndr-* might be pronounced in their dialects. The genesis of this development is not clear, but is considered by Kamil Zvelebil (1970: 96-97, 97 n. 21) to be not unindicative of the postulated interpretation of Proto-Dravidian **ṯ* as a voiced alveolar plosive (probably with slight friction).

In order to make the referred to correspondences and others, I had to make certain not unreasonable assumptions: that all the Dravidian languages from which Sanskrit borrowed might not be extant today; that, therefore, recorded Dravidian etyma might not show evidence of the addition of such a suffix *-nt-*; and that the laws of euphonic combination preserved for us in Old Tamil- which is afterall the oldest form of a Dravidian language- are representative of distinctly Dravidian laws of euphonic combination which were more widespread once in Dravidian. The proof of the assumptions, and any refinements necessary, would be indicated by the results.

Work with these sets of etyma showed that the euphonic combination not infrequently followed the same development as the analogous Proto-Dravidian consonant cluster (**-nṯ-*) in the languages concerned, specifically Ta. *ṉṟ* [*nḏr*], Ma. *ṉṉ*, Ko. *ḏ*, *nḏ*, To. *ḏ*, Ka. *r̦*, *nd*, *Konḍa nṟ* [=*nḍṛ*], Tu. Kui Kuwi *ni/i*, Br.*s*, all other *nd/nḍ* ~ *ṇḍ*. See in this regard, for instance, Thomas Burrow and Murray B. Emeneau (1961 [hence, *DED*]: xii-xiii and 1984 [hence, *DEDR*]: xii-xiii), Bhadriraju Krishnamurti (1961: 70-71) and Kamil Zvelebil (1970: 172-73). Indicated as well was that in some instances the euphonic combination was applied to a retroflex *-ḷ-* which had developed into *-l-*, that such sound changes had taken place at least in some instances as early as the early *Ṛgveda*, that Sanskrit often preserved forms with the consonant cluster in various developments side by side with one another, and that forms with the original consonant cluster are still appearing to enter Sanskrit in post-Vedic times and after. Also indicated was that the language or languages from which early Sanskrit was borrowing were specifically North Dravidian.

That such a suffix *-nt-* is being added to such forms which ended with *-l*, with euphonic combination in force, can perhaps be seen clearly, for instance, in Skt. *kindhin, kuṇḍin, kilkin, kilvin* 'horse', *DEDR* 1711 (a) Ta. *kutirai*, Ma. *kutira*, (b) Te. *gur̲r̲amu*, Kol. *gurram* 'horse'. There is alternation of *-r-* and *-l-* in Dravidian. See Stephan Hillyer Levitt (1989). The Sanskrit forms are variant readings for one another. In Dravidian, *-k-* and *-v-* are regular derivative suffixes as well as *-nt-*. Here we have three common derivative suffixes, *-nt-, -k-* and *-v-*, alternating in the Sanskrit forms in question, the forms with *-nt-* as noted with euphonic combination in force.

Thomas Burrow, on the basis of work done earlier by H. W. Bailey, has previously argued for spontaneous cerebralization of certain forms in Sanskrit. A bibliography of Bailey's work on the subject is given by Thomas Burrow (1971: 540 n. 4). Burrow (1971: 543) has observed that "words containing intervocalic *-ṇḍ-* which though exceedingly common in Sanskrit ... [have] proved impossible to explain by the accepted rules of phonetic development. All attempts to account for it either from Indo-European, by the attempted application of Fortunatov's law, or from Prakrit by various hypothetical stages, have proved to be without exception fruitless. On the other hand H. W. Bailey has shown that it can develop from original *-nd-*. Putting these two facts together, namely the fact that *-ṇḍ-* may represent original *-nd-*, and on the other hand the total impossibility of finding any other explanation for it, we may at this stage go a little further and propose the theory that (leaving aside any loan-words) Sanskrit intervocalic *-ṇḍ-* has only one origin, that is to say, in native Indo-Aryan words it has always replaced an earlier *-nd-*." The material I have gathered offers another explanation of Sanskrit *-ṇḍ-*, and explains the phonological basis for spontaneous cerebralization of *-nd-* in Sanskrit words.

Also with regard to the present discussion, see the opinion of R. L. Turner (1928-30: 128-29) that there was an Indo-Aryan dialect in which *-ndr-* > *-ṇḍ-* on the basis of Skt. *āṇḍa* 'egg' **āndra*, which he would relate to OSl. *jedro* 'testicle'.

I note I have not had the opportunity to see Karl Hoffmann (1941). According to the brief overview of this work given by Karl Zistl (1955: 142-43) this material treats fully Skt. *caṇḍa* and Skt. *puṇḍarīka*, two of the forms treated here as well.

I intend here to give five etymologies which demonstrate the process under discussion. I note these five etymologies are only five from among a much larger number that I have collected. In order to be as clear as possible here, I have restricted myself here primarily to plant and animal names, which have demonstrated a stability in the subcontinent, as often elsewhere, and which are particularly transparent. The forms mentioned here are not noted by Franklin C. Southworth (1979, 1988 and 1993).

I have also given two etymologies which demonstrate clearly a process of "syllabic loss" in loans coming from Dravidian to Sanskrit, Skt. _kola_ 'hog' and Skt. _kroḍa_ 'hog', _kroḍī_ 'sow' and Skt. _pogaṇḍa_ 'not full grown, young, a boy, ... deformed' _(apogaṇḍu)_ and Skt. _paugaṇḍa_ 'boyhood, boyish'. Syllabic loss is perhaps not uncommon in loans from Dravidian.

In most of the instances in question here, however, syllabic loss is most probably within the Dravidian forms themselves. One possibly clear example of such an occurrence is in the Brahui forms for 'lizard' in the discussion of Skt. _kuṇḍṛ́mācī_ below. Other examples in DEDR which indicate such syllabic loss are, for example, possibly DEDR 2814 Ta. _cēr (-v-, -nt-)_ for Brahui (Br. _kēb_), and DEDR 3955 Tu. _paraṇṭu̯, poraṇṭu̯_ (Kol. _paṇḍe_, Nk. _pande_, etc.), for example, for within Proto-Dravidian itself.

$C_1V_1C_2$-V_2C_3- > C_1VC_3-, which is referred to here so as to be nonspecific to process under the general rubric "syllabic loss", is not a feature of Central Dravidian or South Dravidian. The process does appear to have been a feature present within Proto-Dravidian, however. Evidence for this is present in the sporadic way in which forms in which this process seems to have occurred appear in both Central Dravidian and South Dravidian, setting up alternate roots. Thus _DEDR_ 329 Ta. _an̲uppu (an̲uppi-)_ [PDr. *_an̲-_, often associated with a suffix _-up-_: *_amp-_], _DEDR_ 1711 (a) Ta. _kutirai_ and (b) Te. _gur̲r̲anu_ [PDr. *_kut-_, usually associated with a suffix _-(V)r-_: *_kur̲r̲-/_ *_kū̆r-],_ _DEDR_ 4226 Ta. _pīli_ [PDr. *_pī̆c-_, often associated with a suffix _-[a/e]l:_ *_pī̆l-],_ _DEDR_ 4341 Ta. _pun̲ku_ [PDr. *_pul-ik-/_ *_pul-iṅk-:_ *_pun̲k-/_ *_puṅk-]._

Such also appears to have been a process in North Dravidian, although the present evidence for this on the basis of the sets of etyma established in _DEDR_ is scant. Thus _DEDR_ 1338 Ta. _kavuḷi_ [PDr. *_kav-uḷ/_ *_kav-aḷ-_, but Br. *_kul-],_ _DEDR_ 1902 Tu. _kūruni_ [PCDr. *_kū̆r-_, usually associated with a suffix _-uk-_, but PNDr. *_kūk-_], _DEDR_ 4902 Ta. _mucar_ [PDr. *_m[a/u/o]c-ar:_ *_mōr-_, but Br. *_mar-_]. The present scantiness of data may be the result of the process itself.

The total of seven etymologies presented here follow.

1. Skt. _kuṇḍṛ́mācī occurs in Ṛgveda 1.29.6 and Vājasaneyi-saṃhitā_ 24.37. It means 'house lizard' according to _Sāyaṇa_. Previous attempts at derivation remain useless according to Manfred Mayrhofer. That given by F. B. J. Kuiper is truly fantastic. See Manfred Mayrhofer (1956 [_i.e._ 1953-56]-80: 1.22) and 1992 [_i.e._ 1986-92]-99: 1.364). Mayrhofer judges, "not clear". For derivation here, we must assume "syllabic loss". This, however, is demonstrated here in the North Dravidian Brahui forms included with question in DEDR 1338 Ta. _kavuḷi, kauḷi_.

> *DEDR* 1338. Ta. *kavuḷi, kauḷi* lizard. Ma. *gauḷi* lizard, esp. *Lacerta gecko*. Ka. *gavuḷi, gavaḷi* house lizard. Koḍ *gavḷi* big lizard. Tu. *gauḷi* a kind of lizard. Te. *gauḷi* lizard. Go. (Tr.) *gūwhāl* a poisonous lizard smaller than the monitor; (Mu.) *goyhal* iguana (Voc. 1173). ?Br. *glūnṭ, gulōnṭ, klōnṭ,* in: *garrī-glūnṭ*, etc. rough lizard (*garrī* mangy), *tāzī-glūnṭ*, etc. common lizard (*tāzī* greyhound, swift animal). / Cf. Skt. *gaulī*. Details of relationship with *gṛha-golakā-, -golikā-* are unclear (see Turner, *CDIAL*, no. 4324, and Mayrhofer, s.vv.). *DED(S)* 1125.

Note that the North Dravidian Brahui forms have attached to them a suffix *-nṭ-* and if we collapse the form somewhat differently - thus for *gulōnṭ, kul-nṭ* for instance instead of *glūnṭ* or *klōnṭ* (the vowel *-ō-* of the suffix *-ōnṭ-* being structurally a union vowel, *-ōnṭ-* being a suffix on the basis of its position in the form *gulōnṭ*) - we bring the *-l-* into contact with the *-nṭ-*. This would require euphonic combination, and would give us our Skt. *kuṇḍṛ-*. It is not certain whether in this instance and some others it is not such a North Dravidian suffix *-nṭ-* which is behind some of the variability we obtain between Sanskrit forms in *-ndr-, - ndṛ-, -ṇd-, -ṇḍ-, -ṇḍṛ-, -ṇḍhr-, -ndh-* and *-ndhr-*. By this analysis of Skt. *kuṇḍṛnācī*, the last two syllables of the Sanskrit form would be a separate lexical item comparable to Br. *garrī* 'mangy' *and Br. tāzī* 'greyhound, swift animal'.

2. Compare also Skt. *kola (Yājñ +)* 'hog' and Skt. *kroḍa (C)* 'hog', *kroḍī (C)* 'sow' with *DEDR* 771 Ka. *ekkala*.

> DEDR 771. Ka. *ekkala* wild hog. Te. *ēkalamu, ēkalīḍu* id. Go. (Ph.) *akṛā, akṛāl* wild pig; (sc.) *ikundāl* boar (Voc. 9, 150). ?Ta. *ēṉam* wild hog. *DED(S)* 658.

The Sanskrit borrowing of *kroḍa* 'hog', on the basis of the evidence, would be from a Gondi form. In both the older borrowing (Skt. *kola*) and the later borrowing (Skt. *kroḍa*) there is loss of the initial V-. The later borrowing, of course, merged with a pre-existing Sanskrit form *kroḍa*, which led to a lexical transfer to Skt. *kola* of meanings more firmly associated with Skt. *kroḍa*. See Manfred Mayrhofer (1992 [*i.e.* 1986-92]-99: 3.130). Mayrhofer opines, "not clear". Mayrhofer points out that F.B.J. Kuiper has suggested a relationship with a Munda form which, I can suggest, is perhaps indeed related with the forms noted here.

3. Skt. *gundrā̆, guṇḍrā̆ (C)* refers to 'reeds, bulrushes and sedges, particularly *Cyperus*'. Manfred Mayrhofer (1992 [*i.e.* 1986-92]-99: 3.159) judges the etymology of this word to be "unclear". Thomas Burrow (1971: 538) views Skt. *guṇḍrā̆* beside *gundrā̆* to be an example of "spontaneous cerebralization". The alternation in the consonant cluster here is not unlike that in

other forms which it has been possible to relate by the process in question here - for example, *puṇḍra, puṇḍhra, pundra, puṇḍa*. It demonstrates variable realizations of the euphonic combination in question. Compare the Sanskrit forms here with *DEDR* 2235 Ta. *kōrai* and *DEDR* 2231 Ta. *kōru (kōri-), kōlu (kōli-)*.

> *DEDR* 2235. Ta. *kōrai* sedges and bulrushes, *Cyperus*. Ma. *kōra* Cyperus juncifolius. Ka. *koranārigadde* a kind of sedge, *Cyperus hexastachyus* Rottb.*DED* 1850.

> *DEDR* 2231. Ta. *kōru (kōri-), kōlu (kōli-)* ... 'to gather, rake, bale, draw up, catch fish; drag with which rivers are cleared, ladle, fishing net, ...'. *DED(S, N)* 1847.

These two Dravidian sets of etyma are clearly related, one referring to sedges and bulrushes, particularly *Cyperus*, the other to baling, gathering, raking, catching fish, drawing up and to a drag with which rivers are cleared, for instance. We must consider the latter set in this regard since it shows forms with both root final *-l* and *-r*, whereas the former only shows forms with root final *-r*. On the basis of the latter set, we can be sure the variability was present. Such an alternation between *-r-* and *-l-* also exists, for instance, with regard to forms for the number 'one', *DEDR* 990 (a) Ta. *oru, ōr* 'one' and *DEDR* 990 (d) Ta. *oṉṟu, oṇṇu* 'one' (which implies an underlying *-l* + *-nt-*). Regarding an alternation between *-r-* and *-l-*, and *-ṟ-* and *-ṉ-* in Dravidian, see Stephan Hillyer Levitt (1989). To such a root as in *DEDR* 2235 ending with *-l*, add a derivative suffix *-nt-* with euphonic combination and we obtain Skt. *gundrā̆, guṇḍrā̆*. For the realization of Ta. *-ṉṟ-*, PDr. **-nṯ-* as Sanskrit *-ndr-*, compare Skt. *nánā̆ndṛ* with etyma in *DEDR* 3644 Ta. *nāttaṉār*, ... Koṇḍa *nāṉṟa* (nānḍṟa; pl. *nāṉṟek*). *Manḍ. nānjaṛ*. Kui *nanja*. Kuwi (F.) *nanjo;* (Isr.) *nānjo*. Kur. *nāsgo*. Proto-Central Dravidian and Proto-North Dravidian forms reconstruct to **nā̆nṯ-*.

4. Skt. *caṇḍā*, °ī (*AV, E* +) means 'hot, ardent with passion, angry', in compound also 'harsh', 'fierce, violent, cruel', and is a name of the goddess *Durgā*. Skt. *caṇḍatā*, a derivative, means 'warmth, pungency'. Manfred Mayrhofer (1992 [*i.e.* 1986-92]-99: 1.525) notes that the etymology of this word is disputed and controversial. He notes with question R.L. Turner's argument that the word is from Skt. *candrá* on the basis of the Sindhi forms *caṇḍro* 'passionate' and *caṇḍru* 'moon'. Regarding the latter see R.L. Turner (1928-30: 128-29 and 1966 [*i.e.*1962-66]-85: entries no. 4584 and 4661). Also see Louis Renou (1959: 43) who argues that *caṇḍa* is an epithet of the sun, of which the rays are "violent"; whereas *candrá* designates no less typically the moon, but never the sun. The two values are antithetical and do not seem to be able to lead to the same etymology. He further points out that Middle Indic also distinguishes *caṇḍa* and *canda*. Thomas Burrow (1971: 545)

mentions R.L. Turner's argument in passing as having been given in support of Turner's argument that Skt. *āṇḍá* developed from **āndra*, related to OSl. *jedro*. Burrow points out, though, that there is in *Aitareyāraṇyaka* 3.1.2 the word *ānda* 'egg'. That this form shows no trace of an *-r-* would seem to speak against the theory, Burrow argues. Further, by "spontaneous cerebralization", there is no need to assume an *-r-* to explain the *-nd-*. Regarding the theory, though, as well as regarding a relationship between Skt. *caṇḍa* and Skt. *candra*, Burrow remains neutral. I might note that we probably have in Sindhi merger of two etymologically distinct forms. Also to be noted is that F. B. J. Kuiper (1948: 136) suggests a Munda origin. For the etymology given here it was necessary to hypothesize "syllabic loss". Such appears to be indicated, for instance, for Br. *glūnṭ, gulōnṭ, klōnṭ* in *DEDR* 1338 Ta. *kavuḷi, kauḷi* cited under (1) above; for Kur. *kūgnā* and Malt. *kúge* in *DEDR* 1902 Tu. *kūruṇi*; for Br. *maringing* in *DEDR* 4902 Ta. *mucar*; and in Ka. *maḷ, maḷḷu, meḷ* in *DEDR* 4723 Ta. *maruḷ*. Also, perhaps, compare *Dravidian borrowings from Indo-Aryan (DBIA)* S4 Ka. *galla* in Thomas Burrow and Murray B. Emeneau (1972: 478) with *DEDR* 1337 Ta. *kavuḷ* (see Skt. *galla, gaṇḍa*). It can also be found in Kur. *aṅgnā* in *DEDR* 276 Ta. *ạṛal* (*ạṛalv-, ạṛaṉṟ-*) among the forms in the etymology given here for Skt. *caṇḍā̆, °ī*, regarding which see immediately below. And see immediately below among the forms in the etymology given here for Skt. *caṇḍā*, *°ī*, the Kui forms *dlāva, dlāba, ilāva* listed with question in *DEDR* 3115 T*a. tạṛal* (*tạṛalv-, tạṛaṉṟ-*). As noted, this process would appear to be a characteristic of North Dravidian and Proto-Dravidian which has not yet been defined clearly. Skt. *caṇḍā, °ī,* on the basis of the assumption that a derivative suffix *-nt-* was added to a root ending with *-l* with euphonic combination, is to be compared here to *DEDR 276 Ta. ạṛal* (*ạṛalv-, ạṛaṉṟ-*) and *DEDR* 3115 Ta. *tạṛal* (*tạṛalv-, tạṛaṉṟ-*). Required, as posited by *DEDR*, is the assumption of an original initial **c-: *t-*. Skt. *caṇḍā*, of course, would provide a form with *c-* as postulated to exist.

> DEDR 276. Ta. *ạṛal* (*ạṛalv-, ạṛaṉṟ-*) to burn, glow, shine, be acrid, become angry, envy; n. fire, flame, heat, pungency, rage; (Koll.) *aṇal* warmth; *ạṛalavaṉ, ạṛalōṉ* Agni, sun; *ạṛali* fire; *ạṛalikkai* burning, smart; *ạṛaṟci* burning sensation, pungency, rage, envy, inflammation in cattle; *ạṛaṟṟu* (*ạṛaṟṟi-*) to burn (tr.), heat, cause smarting (as a burn, caustic, poison), irritate; *ạṛaṟṟi* that which causes burning; *ạṛaṉam heat, fire; ạṛukku* envy; *ạṛukkaṟu* (*ạṛakkaṟi-*) to be envious; *ạṛukkāṟu* envy; *ạṛuṅku* (*ạṛuṅki-*) to suffer, be in distress, anguish, grieve, sorrow, regret; *ạṛuṅkal* affliction, compassion, pity; *ạṛukkam* care, anxiety, concern; *aṭalai* trouble, distress (prob. < Te.) Ma. *ạṛal* heat, fire, heat of pepper, brightness, inflammation, grief; *ạṛaluka* to burn (as a wound, the eye from pepper), be chafed, burn from grief, envy

or lust; *ạṛalca* excessive heat, inflammation; *ạṛar̲n̲uka* to burn as with pepper, afflict. Ko. *aṛc-* (*aṛc-*) (flame) shoots up; to make (flame) shoot up; *arl* fever (or with 214 Ta. *ari*). To. *as̲* heat of sun or fire. Ka. *ạṛal* (*ạṛald-*), *aḍalu* (< *Te.*) to grieve, be afflicted; n. grief; *ạṛaṭu* to be in anguish (as the sick in a violent fever); *ạṛalike* state of being afflicted; *ạṛalcu* to make sorrowful, harass; *ạṛkaja, akkaja* envy, jealousy; (PBh.) *ạṛv-* to burn. Tu. *arluni* to burn, blaze, smart; *aratè, aradè* heat, burning, impetuosity; (B-K.) *areggālo* hot season, summer. Te. *aḍalu* to grieve, be sorry; n. grief, misery; *aḍanu* grief; (B, K.) to burn, shine. ?Go. (A. Y. S.) *eṛki*, (M. Ko.) *eṛk*, (Tr.) *aṛki*, (W. Ph.) *arki* fever (Voc. 362; the vowel is difficult). Koṇḍa *ṛīmbu* (pl. *ṛīpku*) piece of burning coal, ember. Kuwi (Su.) *ṛīnj-* (*-it-*) to blaze; (Isr.) *ṛīh-* (*-t-*) to make fire burn, light fire. Kur. (Hahn) *aṅgnā* to feel pain in the soles of the feet from walking on a rough road (cf. Ta. *ạṛuṅku*; Pfeiffer). Cf. Ma. *ạṛivu*. Possibly to be connected with 3115 Ta. *taṛal*, etc. on the assumption of original initial *c-: *t-. DED(S, N) 234.

DEDR 3115. Ta. *taṛal* (*taṛalv-, taṛan̲r̲-*) to glow, be very hot, burn, shine; n. fire, live coals, embers; *taṛali* fire; *taṛar̲ci* heat, glow; *taṇal* coals. Te. *t(r)ampi* fire pit, heap of cowdung cakes used as fuel; *tanuku* to burn (intr.). Kol. *tari-* (*tarit-*) (fire) burns; *tarp-* (*tarapt-*) to light (fire). Nk. *tar-* to catch fire; *tarp-* to set fire to, kindle. Pa. *taṛ-, taṛv-* to be hot; *taṛkip-* (*taṛkit-*) *to heat; taṛuran* hot. Ga. (P.) *kis taṛkamul* burning coals. Go. (Tr.) *tarmī* a glowing piece of wood ash; (G. Ma. S.) *taṛmi*, (Ko.) *taṛm* burning coal, ember; (A.) *taṛmi*, (SR.) *taḍmī* fire (Voc. 1683); (ASu.) *taṛmīd.* ?Kui *dlāva, dlāba, jlāva* live coal, embers (communication from P. S. Subhrahmanyam). Possibly to be connected with 276 Ta. *ạṛal,* etc., on the assumption of original initial **c-, *t-. DED(S)* 2542.

Note the remarkable semantic concord, with Sanskrit carrying almost all the meanings from all the Dravidian languages combined. The data is charted in outline form in Table I. The association of the goddess *Caṇḍa* or *Caṇḍī* in India with walking on hot coals can be seen in the Dravidian lexical material.

TABLE I

CAṆḌA	
Etymology disputed and controversial	Proposed Dravidian derivation: *DEDR* 276 Ta. *ạṛal* (*ạṛalv-, ạṛan̲r̲-*) [PDr. **ạṛ-: *aṛ-al-/*aṇ-al-*]; *DEDR* 3115 Ta.. *taṛal* (*taṛlv-, taṛan̲r̲-*) [PDr. **taṛ-/*taṇ-:*.taṛ-al-/*taṇ-al-*].

	(DEDR 276 and DEDR 3115 cross-referenced in *DEDR* on assumption of original initial **c*-:**t*-.)
fierce violent cruel impetuous	rage, harass, impetuosity (*DEDR* 276, Ta. Ka. Tu.). Compare also, perhaps, such meanings as: to suffer, be in distress, grieve, anguish, be afflicted, afflict (*DEDR* 276, Ta. Ma. Ka. Te.).
hot	burning, smart (*DEDR* 276, Ta. Ma. Ka. Tu.); excessive heat (*DEDR* 276, Ma.); hot season (*DEDR* 276, Tu.); fever (*DEDR* 276, Go.); be very hot, burn (*DEDR* 3115, Ta. Te. Kol. Pa.).
ardent with passion	lust, envy, jealousy (*DEDR* 276, Ta. Ma. Ka.).
angry	to become angry (*DEDR* 276, Ta.).
In compound, also: harsh	Compare: smart, cause smarting (*DEDR* 276, Ta. Tu.).
In major derivatives: *caṇḍatā*	
warmth	warmth (*DEDR* 276, Ta.); heat (*DEDR* 276, Ta. Ma. To. Tu.; *DEDR* 3115, Ta.).
pungency	pungency (*DEDR* 276, Ta.).
Caṇḍī	
Name of *Durgā*	Perhaps compare *DEDR* 276 (Koṇḍa) and *DEDR* 3115 (Ta. Ka. Te. Ga. Go. Kui) meanings, 'hot coals, fire pit', with ritual walking on hot coals, etc. in worship of village goddesses. Also see *DEDR* 276 (Kur.) in meaning 'to feel pain in the soles of the feet from walking on a rough road'.

Compare also: *caṇḍa-kara*, 'the sun'	the sun (*DEDR* 276, Ta.).
	Through "syllabic loss, and addition of a derivative suffix *-nt-* to a root ending with *-l* with euphonic combination.
	Regarding such process of "syllabic loss" in this instance, compare:
CAṆḌĀTA	
No Sanskrit derivation at present.	Proposed Dravidian derivation: *DEDR* 210 Ta. *araḷi, alari,* (PPTI) *aralai* [PSDr. **ar-aḷ-*/**ar-al-*]. (on assumption of original initial **c-* > *Ø,* as in South Dravidian.)
Nerium odorum	*Nerium odorum* (Ta. Ma.).
	Through "syllabic loss", and addition of a derivative suffix *-nt-* to a root ending with *-l* or*-ḷ* with euphonic combination, or through addition of a derivative suffix *-nt-* to a new root **al-* formed through metathesis of what would appear to be in the extant South Dravidian forms an original C$_1$ and C$_2$, together with euphonic combination.

5. Skt. *caṇḍāta (L) 'Nerium odorum'* is interesting because of its parallel formation to Skt. *caṇḍā̆, °ī*. It is connected with *DEDR* 210 Ta. *araḷi, alari*, (PPTI) *aralai*, also *'Nerium odorum'*. This is clearly from a different root than that connected with Skt. *caṇḍā̆, °ī. But this root and derivative suffixes -al-/-aḷ- when taken together are a parallel situation to that argued for with regard to* *DEDR* 276 and *DEDR* 3115. Here we must assume that original initial **c-* > Ø in South Dravidian regarding which see, for instance, Kamil Zvelebil (1970: 106). Note that we may instead have here addition of a derivative suffix *-nt-* to a new root **al-* formed through metathesis of what would appear to be in the extant South Dravidian forms an original C$_1$ and C$_2$, with euphonic combination.

> *DEDR* 210. Ta. *araḷi, alari,* (PPTI) *aralai* oleander, *Nerium odorum*; *araḷi* fetid tree, *Sterculia foetida*. Ma. *araḷi, alari, Nerium odorum*; *Plumeria acuminata. DED* 173.

I note that Allan Thrasher has objected to me with regard to separating the etymology of Skt. *caṇḍāta* from Skt. *caṇḍā, °ī on the grounds that Nerium Odorum* is closely connected with the worship of *caṇḍī* in South Asia. Please observe, though, that Skt. *caṇḍāta* is not related to Skt. *caṇḍā, °ī within Sanskrit, whereas āta* does occur as an ending on forms in *DEDR*. See, for instance, Te. *kalāta* in *DEDR* 1303 Ta. *kalaṅku* (*kalaṅki-*), Te. *kolāta* in *DEDR* 1827 (b) Te. *kola*, and Te. *koṟāta* in *DEDR* 1851 Ta. *kuṟu*. Further, the connection here is semantically transparent. I should also point out that *DEDR* does not include many terms for plants which much exist. I have extracted from Monier Monier-Williams (1899) all terms with *-ṇḍ-*, and most refer to plants which are not in *DEDR*. The genesis of Skt. *-ṇḍ-* in most of these instances, however, is probably immediately different from that discussed here.

6. Skt. *puṇḍárīka* (*RV* +) 'lotus, white lotus' has received an assortment of etymologies. These remain, perhaps, far-fetched - relating *puṇḍárīka* to an Austro-Asiatic color word, or alternately to a Dravidian word for water, for example. Karl Hoffmann (1941) has indicated a frequent connection within Sanskrit with Skt. *pāṇḍú* 'white, pale'. See Manfred Mayrhofer (1956 [*i.e.* 1953-56]-80: 2.300-301 and 1992 [*i.e.* 1986-92]-99: 2.141). Regarding the etymology of this word, Mayrhofer opines "not surely explained". I would relate it here to a word for 'lotus' in *DEDR* 4997 Ta. *muḷai* (*-v-, -nt-; -pp- -tt-*), which etyma mean primarily 'to sprout, bud'. The word for 'lotus', Ta. *muḷari*, is included with this set of etyma with question.

> *DEDR* 4997. Ta. *muḷai* (*-v-, -nt-; -pp-, -tt-*) to spring, grow as horns, hair etc., sprout as shoots, germinate as seeds; n. shoot, sprout, seedling; *?muḷari* lotus. Ma. *muḷa* germ, shoot, young plant; *muḷekka* to germinate, shoot, grow up as rice plants; *muḷavu, muḷeppu* sprouting, germinating. To. *mïł̣, mïḷ* shoot of plant. ... Pe. *moka* shoot, sprout. Kui *moka* a shoot. ... Kur. *muī̃* the minute pedicle (in pulse grains) which is to develop when sprouting; *muī̃–muī̃rnā* to germinate, either in soil or spontaneously. *DED(S, N)* 4100, and from *DED(N)* 4007.

Thomas Burrow (1947-48: 391) has previously proposed a connection between the Dravidian form in question (Ta. *muḷari*) and Skt. *mulā́ī* 'a species of edible lotus', *mṛṇālin (L), mṛṇālinī (C)* [√*mṛṇ*] 'a lotus plant,' which later he appears to have dropped as uncertain. With the association with Skt. *mulālín, mulālī́*, an *Atharvaveda* form, I agree. In order to get a form such as Skt. *puṇḍárīka*, one has to add *-nt-* and posit the Indo-Iranian alternation *m* ~ *b*. It is probably this alternation which led to the probable Brahui development of *m-* > *b-*[fV, *m-*[non-fV, and may indicate as well a development of (?) *b-*[non-fV. Sanskrit *p-* instead of *b-*, of course, we would account for on the basis of lack of contrast between *p-* and *b-* in Dravidian. Such lack of contrast appears to be indicated for at least some northern Dravidian by Skt. *tandra°, tandrā°* and *tandrī°* standing in compounds for *tantra, tantrā* and *tantī*.

7. Compare Skt. *pogaṇḍa (C)* 'not full grown, young; a boy; having a redundant or defective member, deformed', and Skt. *paugaṇḍa* 'boyhood, boyish', with *DEDR* 4603 Ma. *pōṟa*. This is an instance in which we have a clear example of "syllabic loss" in the Sanskrit loanform. Manfred Mayrhofer (1992 [*i.e.* 1986-92]-99: 3.336) opines regarding this form "not clear". He mentions that "perhaps *apogaṇḍa* is primary (an *apa-* composition?)." With question he mentions the connection of R.L. Turner (1966 [*i.e.* 1962-66]-85: entry no. 8394.1) with continuations of **pōṅga* (Hi. *pū̃gṛā, m.* 'boy', etc.), which Turner would connect with Skt. *pōta*, etc. R. L. Turner (1966 [*i.e.* 1962-66]-85: entry no. 8399) views Skt. *pōta* to be probably in origin a Dravidian form, with Thomas Burrow (1947-48:386). Ludo Rocher (1973) argues that *apogaṇḍa* is not an *a-* negative formation, as it is understood by Monier Monier-Williams (1899: 56c), for instance, but rather that it is the primary form which on the basis of incorrect interpretation led to a form *pogaṇḍa*. Skt. *apogaṇḍa* he would understand to be a negative formation with *apa-*. "As soon as the meaning of the second element in *apogaṇḍa* was lost, this negative form in *apa°* could easily be confounded with those negative forms in *a°* the second element of which began with *pa°*, ... (p. 473)." Consider, though, the Telugu form *poṟigā̃ḍu* 'boy, child' in *DEDR* 4603.

> *DEDR* 4603. Ma. *pōṟa* silly, a glutton. Ka. *pōra* child, little boy, little girl, young and inexperienced person; *pōri* little girl. *Tu. pōra, pōre* lad; *pōri* lass. Te. *pōṟāḍu* boy, child, young man; *pōṟi* girl; *pōṟigā̃ ḍu* boy, child. Go. (S.) *pōri* young of pig; (F-H.) *pori* chicken; (Pat.) *pitteng poring* young of birds (Voc. 2451). *DED(S)* 3764.

The loan is clearly from Te. *pōṟigā̃ḍu* with loss of the second syllable of the form in Sanskrit. The details of Rocher's argument regarding Skt. *apogaṇḍa*, though, are well taken and it can be suggested that these terms in *DEDR* are related to *DEDR* 156 (a), Kui *āpo* (pl. *āporu*) boy, son; *āpi* girl, wife. Also, in Tamil usage one euphemistically addresses a young boy as *appā* 'father'. *DEDR* 156 (a) notes for Ta. *appaṉ, appu* father; term of endearment used to little children or inferiors. Also, Ma. *appan* father; *appu* affectionate appellation of boys. And so forth for Kannada as well. It can be suggested that *pogaṇḍa* and *apoganda* are simply alternate forms for one another which demonstrate an etymological origin in Dravidian of the etyma in *DEDR* 4603 Ma. *pōṟa* from the etyma in *DEDR* 156 (a) Ta. *appaṉ, appu*.

Lastly, I would like to point out more fully, but nevertheless in brief, some of the evidence for Dravidian forms with *-l* adding a suffix *-nt-* which appears within Sanskrit itself. This includes:

(a) Skt. *kilkin, kilvin* 'horse' (*L*): Skt. *kindhin* (*v.l.* for *kilkin*), *kuṇḍin* (*v.l.* for *kindhin*). [Compare *DEDR* 1711 (a) Ta. *kutirai* and (b) Te. *gur̠r̠ammu.*]

(b) Skt. *galla* 'cheek' (*C*): Skt. *gaṇḍa* (*C*).

(c) Skt. *phaliga* 'cask or leather bag or anything to hold fluids - applied to clouds or water receptacles in mountains' (*L*), *phalka* 'one who has an expanded or extended body' (*L*), √*phal* 'to burst, cleave open or asunder' (*E* +): Skt. *phā̆ṇḍa* 'the belly' (*S, L*), *phaṇḍin* 'name of a serpent demon' (*L*) [*via* mythology of *Vṛtra*].

(d) Skt. *bhalla* 'auspicious' (*ChUp* (?), *L*): Skt. *bhandra* (*L*), √*bhaṇḍ* (*L*), √*bhand* (*L*).

(e) Skt. *maluda, maluma* 'particularly high numbers' *(Buddh.)*: Skt. *badva* 'a large number, multitude' (*B* +), *badvaśas* 'in large numbers' (*B*) [*via* √*mand/mad* (?), Br. *m-* > *b-*[fV].

(f) Skt. *malvá* 'unwise, silly, foolish' (*AV*): Skt. *manda* 'dull-witted, silly, stupid, foolish' (*KaṭhUp* +).

(g) Skt. *sthala* 'dry land, firm earth' (*TS* +), 'ground, soil, place, spot' (*E* +), *sthalā* 'heap of artificially raised earth, mound' (*TS*), *sthalī* 'a tableland' (*E* +), 'soil, ground' (*C*): Skt. *sthaṇḍilā* 'an open unoccupied piece of ground, bare ground, an open field' (*E* +), 'a piece of open ground prepared for sacrifice' (*B, S*). [Compare, however, Skt. √*vac* and Skt. *vacaṇḍa*, Skt. *śikhā* and *śikhaṇḍa*. Perhaps, *sthaṇḍilā* < Skt. √*sthā.*]

In short, as can be seen in cases of plant and animal names and from instances of remarkable lexical concord, Sanskrit borrowed forms from Dravidian which end in *-l* with the addition of a suffix *-nt-*. Laws of euphonic combination similar to those in Old Tamil appear to have been in force, with the euphonic combination following the development within Dravidian of the sounds in question. Such addition of *-nt-* for the forms in question, as it does not reconstruct for Proto-Dravidian, must have been a feature of the language or languages from which Sanskrit was borrowing - which on a number of points can be shown to be specifically North Dravidian at least in the early instances. Further, evidence would appear to indicate "syllabic loss" in some of the loans from Dravidian to Sanskrit, at times on account of a process of "syllabic loss" within North Dravidian or Proto-Dravidian. Such "syllabic loss" can be seen in examples from within Dravidian itself.

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KĀTANTRA AND NON-PĀṆINIAN GRAMMARS VIS-A-VIS BENGAL*

KARUNASINDHU DAS
Rabindra Bharati University, Kolkata

Abstract

Bengal's contribution to Sanskrit grammar in **Pāṇinian** *and* **non-Pāṇinian** *systems represent a great tradition of language analysis in many of its ramifications including morphology, syntax and semantics. Advent of the* **Cāndra School** *in the 5th Century A.D., its impact on* **Kāśikā** *and development of subsequent commentary literature of the* **Pāṇinian** *system complete a full circle of the* **Pāṇinian** *studies by the Buddhists grammarians of Bengal around 12th Century A.D. Later grammarians in this part of India shifted their attention to some* **non-Pāṇinian** *systems so much so that a very large number of codifications, commentaries, scholia, appendices, supplementary and discourses relating to* **Kātantra, Mugdhabodha, Saṃkṣiptasāra, Sāraswata, Supadma, Prayograratnamālā** *and* **Harināmāmmṛta** *systems developed. This paper made a comparative study in arrangement of rules and distribution of topics in different* **non-Pāṇinian sūtra** *texts that would reveal much of experiments done by these grammatical schools. It has also made a comparison between the* **Pāṇinian** *system and the* **non-Pāṇinians**. *Bengal benefits a lot from this great heritage of language analysis. The 'philosophical grammar' of neo-logicians of medieval Bengal had been immediately linked with this* **non-Pāṇinian** *tradition. How far Bengali grammar has been derived and influenced by these* **non-Pāṇinian** *sources is also discussed in this paper.*

Bengal's contributions to Sanskrit grammar in *Pāṇinian* and non-*Pāṇ*inian systems represent a great tradition of language analysis in many of its ramifications including morphology, syntax and semantics. While advent of the *Cāndra School* in the 5th cent. Christian era, its impact on *Kāśikā* and development of subsequent commentary literature of the *Pāṇinian* system viz. Jinendrabuddhi's *Nyāsa* are certainly notable events of early history of grammar, Maitreyaraksita's *Tantrapradīpa* and *Dhātupradīpa*, Indumitra's *Anunyāsa*, *Puruṣottamadeva's Bhāṣāvṛtti* and *Paribhāṣāvṛtti, Sīradeva's Paribhāṣāvṛtti* and *Śaraṇadeva's Durghaṭavṛtti* complete a full circle of *Pāṇinian* studies by Buddhist grammarians of Bengal around twelfth century A.D. For reasons best known to them, later grammarians in this part of India however shifted their attention to some *non-Pāṇinian* systems so much so that subsequent centuries could offer us a very large number of codifications, commentaries, scholia, appendice, supplementaries and discourses relating to *Kātantra*, *Mugdhabodha*, *Saṃkṣiptasāra*, *Sārasvata*, *Supadma*, *Prayogaratnamālā* and *Harinamāmṛta* systems. A brief survey of literature developed in this process and the pool of knowledge accumulated thereby would make an interesting study indeed.

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Kātantra, otherwise called *Kalāpa* is an old name occurring in the form *Kālāpaka* as an example of the supplementary rule viz. *saṃkhyāprakṛter iti vaktavyam* on *Pāṇini's sūtrāc ca kopadhāt* (P. 4.2.65) and the *Sātavāhana* king whose name is associated with origin of *Kātantra* by *Sárvavarman* belonged to the first century A.D. Of the two recensions viz. the Kashmir and the Bengal ones, the latter school of *Kātantra* can rightly boast of such works as *Pañjī* by *Trilocanadāsa*, *Vyākhyāsāra* or *Kalāpacandra* thereon by *Suṣena Kavirāja*, *Kātantrapradīpa* by *Puṇḍarīkākṣa Vidyāsāgara*, *Kātantrapariśiṣṭa* by *Sīpatidatta*, *Pariśiṣṭaprabodha* thereupon by *Gopīnātha Tarkācārya*, *Kātantrottarapariśiṣṭa* by another Trilocana, *Kātantrapariśiṣṭasiddhāntaratnākara* by *Śivarāmacakravartin*, *Kātantrataddhitapariśiṣṭa* by *Sītānāthasiddhāntavāgīśa* and so on.

The list of commentaries, scholias and annotations include Karmadhara's *Kātantravṛttiprakāśa* (written at the instance of a minister of Alauddin Hussain Shah of Bengal during 15th-16th Cent. A.D.) *Rāmanāthacakravartin's Śabdaghoṣā* and *Kātantradhātuvṛtti*, *Ramākāntacakravartin's Sāranirṇaya*, *Rāmakiśoracakravartin's Aṣṭamaṅgalā* on *Pañjī*), *Harirāmacakravartin's Kātantravṛtticandirkā*, Narahari's *Pañjikāprabodha*, *Rāmadāsacakravartin's Vyākhyāsāra, Kulacandra's Durgavākyaprabodha*, *Śivadāsa's Kātantra Uṇādivṛtti*, *Rāmanātha Vidyāvācaspati's Kātantrarahasya*, *Śaṅkaraśarman's Kātantrapariśiṣṭaprabodhaprakāśikā*, *Hariścandrasena's Kalāpasaṃgraha*, *Pītāmbaravidyābhūṣaṇa's Dhātusūtraprakāśikā*, *Rāmacandra's Kalāpatattvabodhinī*, Rahasanandin's *Kātantraṣaṭkāraka, Jayarāma's Kārakapadārtha*, *Kāśīnāthamiśra's Dhātusaṃgraha*, Raghunandana's *Kalāpatattvārṇava*, *Vaṅgasena's Ākhyātaqvyākaraṇa*, *Bhairavamiśra's Śabdasādhanasaṃgraha*, *Śīvarāmadāsaśarman's kṛnmañjarī*, Bharatamallika's *Kārakollāsa* and many such works only a few of which were available in print.

Initially the system had 855 rules in three chapters on *sandhi, nāma* and *ākhyāta*, distributed over nineteen sections (*pāda*). *Durgasiṃha*, the commentator added six more sections with 546 rules on primary suffixes by Vararuci. In Kashmir school, rules on feminine suffixes by Vararuci framed another additional section. 255 *uṇādi* suffixes also were introduced to this system perhaps by *Durgasiṃha's* rules. *Śrīpati's Pariśiṣṭa* rules augmented further details on several sections including that on case-relations. *Sītānātha* (20th cent. A.D.) made provision for addition of some secondary suffixes to the prevailing ones while *Candrakāntatarkālaṅkāra's* (1836-1909) *Kātantrachandaḥprakriyā* introduced grammatical analysis of the Vedic language in terms of *Kātantra*. The system had been so popular in Bengal that it influenced formulation of a text book of musicology by *Śaurīndramohanathākura* under the caption *Gāndharva-kalāpavyākaraṇa*.

The process of gradual completion of a system over centuries together is noticeable also in other *non-Pāṇinian* schools. The Mugdhabodha for example came into being with 1185 rules along with the autocommentary thereon by Vopadeva (13th cent. A.D.). But it is in the commentary by *Rāma Tarkavāgīśa* that areas previously left over were covered by way of supplementary rules. An elaborate arrangement of secondary suffixes was thus effected in the system. Commentaries by *Durgādāsa Vidyāvāgīśa* etc. and accessory treatises by *Nandakiśorabhaṭṭa*, *Kāśīśvara* etc. also made valuable contributions to elaborating the process. As for *Saṃkṣiptasāra*, the original *sūtra* text by *Kramadīśvara* (9th cent. A.D.) perhaps had a section on *Prākṛta* and *Apabhraṃśa* as well which was dropped later on by some inconsiderate persons and it was by *Nyāyapāñcānana*, an annotator of the school that the section was partly restored by subsequent formulation. An early commentary (vṛtti) too was rephrased and edited under the caption viz. *Rasavatī* by Jumaranandin. *Goyīcandra's Vivaraṇī* on this *Rasavatī* had several scholia viz. *Goyīcandravyākhyānakaumudī* by *Abhirāma Vidyālaṅkāra Bhaṭṭācārya*, *Vyākārasāralaharī* by Kavicandra, and *Vyākāradīpikā* by *Nyāyapancānayna* to be followed by *Sārasaṃgraha* by *Pītāmbaraśarman*, a gloss on *Vivaraṇī* by *Vaṃśīvadana*, another gloss by *Gopālacakravartin*, a commentary on the *Prākṛta* section by *Nārāyaṇavidyāvinoda* and so on.

In the *Sārasvata* school, a *paribhāṣā* section of fifteen canons was planned by one *Sadānanda* and the same was developed by *Nandakiśora Vedāntatīrtha* with additional formulations. Cases of other eastern schools of grammar viz. *Harināmāmṛta*, *Supadma* and *Prayogaratnamālā* are not different either. The first sprang up as a sectarian grammar for the *Gauḍīya vaiṣṇavas* under the stewardship of the trio of early *Gosvāmins* of *Vṛndāvana* and flourished through commentaries. Supadma which was formulated by *Padmanābhadatta* at Darbhanga and *Prayogaratnamālā* which originated at the royal court of Coochbehar in north Bengal too were nurtured and enriched by commentators in Bengal. Of the commentaries and glosses in this school, *Candrakīrti's* work reigns supreme, though *Sāradīpikā* by *Jagannātha*, *Pañjikā* (on conjugation and secondary suffixes) by *Kṛṣṇanātha*, *Padacandrikā* by *Govindācārya*, *Siddhāntacandrikā* by *Rāmāśrama*, *Prasāda* by *Vāsudevabhaṭṭa* etc. too have contributed a lot.

A comparative study in arrangement of rules and distribution of topics in different *sūtra* texts would reveal much of experiments in grammatical schools, as the following tables show:

KĀTANTRA

3 Chapters (addressed to *sandhi*, *nāman* and *ākhyāta*), 19 sections, 1018 rules.

Chapter I	*Sandhi*, 79 rules
Section I	Necessary technical terms
Sections II-V	Euphonic combinations
Chapter II	*Nāman*, *Catuṣṭayavṛtti*, 434 rules
Section I - III	Declension of nominal and pronominal stems
Section IV	Cases and Case-endings
Section V	Compounds (28 rules)
Section VI	Secondary suffixes including *samāsānta* ones (147 rules)
Chapter III	(*Ākhyāta*) (66 & 439 = 505 rules)
Section I - VIII	Conjugation of verbs, active & middle, primary and secondary, concerned operations viz. augmentation, substitution, gemination, elision etc.
Chapter IV	*Kṛt*, 546 rules (Supplied by Vararuci)
Sections I - VI	About 100 primary suffixes

SAṂKṢIPTASĀRA

7 Chapters, 3859 rules.

Chapter I	*Sandhi*, 380 rules Types of euphonic combinations, all possible occasions of *vṛddhi* and *guṇa* and cerebralization of nasal and sibilant
Chapter II	*Tiṅanta*, 917 rules Conjugational patterns and their use
Chapter III	*Kṛt*, 546 rules Primary suffixes including *uṇādi* ones treated in a separate section with 222 rules followed by another section of 60 rules on *uṇādi* suffixes framing indeclinables
Chapter IV	*Taddhita*, 901 rules Secondary suffixes, all feminine suffixes included as taddhitas (114 rules) followed by a section called *Taddhitapariśiṣṭa* in 558 rules for a supplementary list of secondary suffixes

Chapter V	*Kāraka*, 207 rules Cases and case-endings
Chapter VI	*Subanta*, 405 rules Declension of nominal and pronominal stems
Chapter VII	*Samāsa*, 507 rules
Chapter VIII	*Prākṛta*, 463 rules 325 rules on *Prākṛta*, 117 rules on *Apabhraṃśa* and one on meters.

SĀRASVATA

Section I	Sandhi	
Section II	Declension	
Section III	Feminine suffixes	
Section IV	Case relations and case-endings	
Section V	Compounds	
Section VI	Secondary suffixes	
Section VII	Conjugation	
Section VIII	Primary suffixes	
	VIII / I	*Kartrartha-prakriyā* (for agent nouns)
	VIII / II	*Niṣṭhā* (past participle, active and passive)
	VIII / III	*Kvasvādi* (past perfect participle)
	VIII / IV	*Uṇādi* suffixes
	VIII / V	*Bhāva* (for action nouns)
	VIII / VI	*Kṛtya* (gerundives)
	VIII / VII	*Strī pratyaya* (primary suffixes resulting in feminine forms)
	VIII / VIII	*Ktvā* etc. (gerunds)
Section IX	*Lingānuśāsana* (ascertaining genders)	

SUPADMA

5 chapters, each of 4 sections, 2800 rules

Chapter I	Technical terms, *sandhi*, cerebralization of nasal and sibilant
Chapter II	Cases, case-endings and declension
Chapter III	Conjugation
Chapter IV	Primary suffixes, *uṇādi*, compound and *aluk*
Chapter V	Secondary suffixes, feminine suffixes

That aim and purpose of codification and reorganization of topics were not the same in these schools of grammar need not be overemphasized. The *Kātantra*, for example, aimed at supplying the reading material for a crash course in Sanskrit language for miscellaneous target groups viz. Vedic priests, scholars in various other disciplines, administrators, businessmen, unintelligent and lazy fellows, farmers, ailing people etc. cf. *chāndasāḥ svalpamatayaḥ sāstrāntararatāśca ye, īśvarā vyādhiniratās tathālasyayutāśca ye, vaṇiksasyādisaṃsaktā lokayātrādiṣu sthitāḥ, teṣāṃ kṣipram prabodhārtham anekārthaṃ kalāpakaṃ*

(*Vyākhyānaprakriyā*, a ms at Deccan College &
Sampurnanand Sanskrit University, *Sarasvatībhavana*)

The *Sārasvata* school vows to offer a not-too-lengthy and pointed discourse with an eye to augmenting linguistic understanding of the beginners (*bāladhīvṛddhisiddhaye, sārasvatīm ṛjuṃ kurve prakriyāṃ nātivistarām*). With the Mugdhabodha, it is both speaking Sanskrit language and chanting the names of lord Mukunda that makes the exercise fruitful (*gīrvāṇavāṇīvadanaṃ mukundasaṃkīrtanañce tyubhayaṃ hi loke / sudurlabhaṃ tacca na mugdhabodhānna labhyate'taḥ paṭhanīyam etat//*) *Vopadeva*, the *sūtrakāra* is highly praised as the veritable craft for crossing the ocean of grammar (*Vyākaraṇārṇavaīkataraṇiś Cāturyacintāmaṇiḥ*) and the crest-jewel of expertise in the field. The *Saṃkṣiptasāra*, on the other hand, was expected to be a mirror reflecting all the grammatical deliberations available till date in the land (*mukure karinikurambapratibimbaṃ dṛśyate yadvat / tadvad vyākaraṇānāṃ sāram ihālpe'pi dṛśyatāṃ sadbhiḥ*).

Verily, experiments went on and on in areas of phonology, morphology, syntax, semantics etc., through the schools which very often interacted among themselves. Thus, the *Māheśvara* scheme adopted by *Pāṇini* regarding arrangement and sequence of sound symbols in alphabet did not go unchallenged. True *Mugdhabodha*, *Sārasvata*, *Supadma* etc. followed *Pāṇini*, but *Kātantra* rearranged the same by taking 14 vowels (*tatra caturdaśādau svarāḥ*-1.1.2) to be followed by 33 consonants right from *k* (*kādīni vyañjanāni*-1.1.90) to h. A commentary on the Supadma rule viz., *aco'nye hal* (1.2) also accepted by *hal* (consonants) letters from *k* to *h* (*kādayo hāntāḥ*). This *Kātantra varṇasamāmnāya* is more less followed in NIA grammars till date. Addition of *kṣ* (क्ष) to the list is a later event borrowed from extra-grammatical sources viz. *tantra* and it is found already adopted by *Śaṅkara* in his *Annapūrṇāstotra* viz. *a-ādi-kṣānta-samastavarṇanakarī śambhostribhāvākarī* etc.

As regards affixation while *Pāṇini* and *Kātyāyana* suggested 61 primary suffixes (55 + 6) in addition to six zero suffixes, *Kātantra* brought down the number to 45 (42 + 3 zero affixes) and *Saṃkṣiptasāra* minimized further by admitting 25 suffixes only, though about 15 others were admitted to the *uṇādi* list in this system. The number is 61 (58 + 3) in Mugdhabodha; it dropped a few from *Pāṇini's* list but added *-syat*, *-syamāna*, *-ant* as new ones. Against about 165 (125 + 40) secondary suffixes proposed in the *Pāṇinian* scheme, *Saṃ* had 60 ones only though the appendix added 126 more to the original list. *Kātantra* had 37 *taddhitas* at the initial stage but then *Kātantrataddhita-pariśiṣṭa* added 104 more. Number of *taddhitas* in Mugdhabodha is around 104 only. Difference in treatment is equally interesting. Thus *Pāṇini* had *-tri* < *ktri* as a primary suffix to be followed by *-ma* as the secondary one (e.g. √ *kṛ* + *tri* + *ma* > *kṛtrima*); others admit *-trima* as the secondary suffix for the purpose. Against *-astāt* (e.g. *adharastāt*) in *Pāṇini* and *Kātantra*, *Saṃ* and Mugdhabodha admit *-stāt* as the suffix. Against *Pāṇini's etad* + *vat* > *etā-vat*, *Kātantra* had *etad* + *āvant* > *et* - *āvant* > *etāvant*. For *iyat/iyant, Pāṇini* had *idam* + *vat* > *ī* + *iya-t* > *iyat*; in *Kātantra*, the suffix is *-iyant* which effects total elision of the base. *Kātantra* and *Saṃ* proposed *-epha* (eg. *repha*) and *-kāra* (e.g. *akāra*) which were not available in *Pāṇini's* school. *Pāṇini* had to accommodate a number of suffixes for interpretation of the vedic language; no *post-Pāṇinian* school ever cared for the same for obvious reasons. Addition; alteration, rejection or otherwise of suffixes in the *uṇādi* list is a common feature with every school of Sanskrit grammar.

As regards significant letters added to affixes, *Pāṇini's* school employed as many as 18 (viz. *Ṇ, Ñ, K, G, Ṅ, Ḍ, Ṭ, Ṣ, Ś, Y, M, N, C, P, T, L, R, S*). In Mug. they are 14 (*Ṇ, C, K, Ṅ, Ñ, Ṭ, Ḍ, S, P, M, N, KH, HG, Ś*), in *Kātantra* 13 (*K, Ñ, Ṇ, Ś, Ṭ, Ḍ, C, P, Ṅ, GH, KH, L, Ṣ*) and in *Saṃ* 10 only (*Ṅ, Ṇ, Ṭ, KH, Ḍ, GH, T, Ś, K, C*). In *Pāṇini*, *P, C, N, E, R* were exclusively meant for location of the accented syllable in a derivative. Later schools did not take accent into consideration that way. Significance of many of such indicatory letters vary in schools. For example, *C* is added to an affix in Mugdhabodha to show that the derivative is an indeclinable. (cf. *cakāro'vyayārthaḥ* - *Durgādāsa* on Mug. 1165). Interestingly, *Ḍ* in every school signifies partial elision of a base in case the subsequent suffix bears it. *Pāṇini* and *Kātantra* had 16, Supadma 18, *Saṃ* 18, Mug. 7, *Prayogaratnamālā* 10, *Sārasvata* 3 suffixes with initial *Ḍ* for the purpose.

Studies in compounds in *non-Pāṇinian* schools too have some distinctive features of their own. They range from coinage of new technical terms to collection of new data, processing the same and reinterpretation of rules. *Harināmāmṛta*, for example, defines compounding as clubbing two or more words into one (*antarbhinnapadatve'pi ekanāmatvena yojanam samāsaḥ* - HN 6.3) while *Prayogaratnamālā* treats each compound as an indivisible whole (*narasiṃhavad akhaṇḍaḥ samāsa iti* - PR 321). Classes of compounds named in different schools are as follows:

P.	Jainendra	Mug.	HN
avyayībhāva	*ha*	*va*	*avyayībhāva*
tatpuruṣa	*ṣa*	*ṣa*	*kṛṣṇapuruṣa*
dvigu	*ra*	*ga*	*trirāmī*
bahuvrīhi	*va*	*ha*	*pītāmbara*
dvandva		*ca*	*rāmakṛṣṇa*
karmadhāraya		*ya*	*syāmarāma*

Sometimes opinions differ on classification of compounds. Cases of *vyatihāra bahuvrīhi* for example, are found treated as those of *avyayībhāva* in *Śākaṭāyana's* grammar and *Kātantrapariśiṣṭa* follows suit in this respect by clear deviation from *Pāṇini's* scheme. Compounds with negative particle as the first member thereof e.g. *a-brāhmaṇa* belong to *karmadhāraya* type as per *Kātantra* while *Goyīcandra* of the *Saṃ* school is opposed to the view. To *Sārasvata*, *ekaśeṣa* is not at all a separate *vṛtti*, as *Pāṇini* and others would say, but a peculiar type of *dvandva* compound with elision of the first member (cf. *ādeśca dvandve*): Problemṣ relating to co-reference in case of compounds between qualification and qualificand terms, *samuccaya* and *samāhāra* as negative and positive conditions of *dvandva* compound and many such items of both grammatical and philosophical niceties around compounding have been squarely faced and dealt with in *non-Pāṇinian* circles in very different ways than *Pāṇini's*. Their impact on NIA grammars cannot be overlooked.

Contributions of these grammars to studies in *kriyā* and *kāraka* relationship are no less important either. Thus the ancient ideas of *bhāva* and *kriyā* have been re-shaped in *Goyīcandra's Vivaraṇī* (*Saṃ* 5.1) according to which *kriyā* is of two types viz.: *parispanda-sādhana-sādhya* and *aparispanda-sādhana-sādhya* signified by verb of motion and verb of station respectively, the basis of this classification being *Kaiyaṭa's* observation on *karmavat karmaṇā tulyakriyaḥ* (P. 3.1. 87) viz. *aparispandana-sādhana-sādhyo dhātvartho bhāvaḥ, saparispandana-sādhana-sādhyastu kriyā*. *Pāṇinian* scholars widely differ on what *kāraka* relationship actually means and *non-Pāṇinian* schools join the fray. To *Patañjali* and *Nāgeśa*, a *kāraka* justifies itself by its role in participating in accomplishment of an act; to *Kāśikā*, *Bhāṣāvṛtti* etc. It is nothing more than a *hetu* or *nimitta* of an act. *Durgasiṃha* of *Kātantra* school followed by *Gopīnātha Tarkācārya*, Mugdhabodha and *Goyīcandra* of *Saṃkṣiptasāra* follow *Kāśikā* in this respect. *Prauḍhamanoramā* by *Bhaṭṭoji*, followed by Jyotna thereupon means by *kāraka* one which relates itself to an act (*kriyānvayitvam*). *Bhavānanda Siddhāntavāgīśa* improves upon it by saying that a *kāraka* is one which is related to an act through the meaning of a case-ending (*vibhaktyarthadvārā kriyānvayitvam*). *Rāma Tarkavāgīśa* of Mugdhabodha adds thereto the proviso viz. 'provided that the meaning of a word excepting an indeclinable is not an intermediate item' (*avyalyarthādvārakatve sati kṭyarthadvārā kriyānvayitvam* - on *Saṃjñāḥ kam*). *Jagadīśa's Śabdaśakti* (verse 67) moves further to state that 'a *kāraka* is the meaning of a case-ending which qualifies the meaning of the verbal root concerned (*dhātvarthāṃśé prakāroyaḥ subarthaḥ so'tra kārakam*).

As for what the term viz, *kāraka* refers to also, grammarians have difference of opinion in certain respects. *Patañjali* on P.2.3.1. categorically stated that *kāraka* would refer not to a material object but its capability of accomplishing an act (*guṇa ityāha... dravye punaḥ sādhane sati yat karma tat karmaiva syāt, yat karaṇaṃ eva.*). *Rāma Tarkavāgīśa*, *Gopīnātha Tarkācārya* and *Abhirāma Vidyālaṁkāra* have contributed substantially to these deliberations. Various capabilities leading to admission of different *kārakas* in relation to one and the same act in an object are pointed out by them. Role of speaker's intention in upholding one *kāraka* at a time is also ascertained. A locus or instrument in reality may therefore occur as the agent or so of the act in verbal communication without affecting objective reality. This justifies *sthālī pacati* (the pot cooks), *sthālyā pacati* (he cooks with a pot), *sthālyāṃ pacati* (he cooks in a pot) and so on.

That Bengal benefits a lot from this great heritage of language analysis need not be overemphasized. It is not wonder that 'philosophical grammar' of neo-logicians of medieval Bengal had been intimately linked with this *non-Pāṇinian* tradition. *Jagadīśa's Śabdaśaktiprakāśikā* (on verse 82) for example records its appreciation of the *Kātantra* view that in case both locative and instrumental cases are simultaneously relevant, the case-marker would mean the latter (*karaṇatvādhāratvayor ekadā anvayasthale adhikaraṇārthikaiva vibhaktir apekṣitā iti prāñcaḥ. karaṇatvārthikaiva tathā iti kālāpāḥ*). On verse no. 90 also, the *Kātantra* viewpoint (*kaumārāḥ*) is upheld with care. Commentaries on *kāvyas*, lexicons viz. *Amarakoṣa* etc. and a number of handbooks of Sanskrit grammar in Bengal also based themselves on *non-Pāṇinian* systems. Bharatamallika (early 18th century AD), for example, wrote a commentary viz. *Mugdhabodhinī* on *Amarakoṣa* in terms of Mugdhabodha grammar (cf. *śrībharatasenaviracitāyām amarakoṣaṭīkāyāṃ mugdhabodhinyām...*; also, *iti nānāgranthadṛṣṭyā mugdhabodhānusārataḥ sāmānyakāṇḍavyākhyānaṃ cakre bharatamallikaḥ*).

Dictionaries compiled in Bengal in the past two centuries referred to *Kātantra*, *Mugdhabodha* or so on every now and then; *Śabdakalpudruma* edited by *Rādhākānta Deva* is a glaring case in point to refer to suffixes as per Mugdhabodha formulations. Similarly, *Śabdasāra* by *Girīśacandra Vidyāratna* (*Śaka* 1782 = 1267 B.S.) is found to take recourse to Mugdhabodha terminology, suffixes along with the *anubandhas* and so on. *Tārānātha Tarkavācaspati* (TTv), a contemporary of *Īśvaracandra*

Vidyāsāgara, however, tried to revive Bengal's interest in *Pāṇinian* studies by referring to *P's* rules and method in his *Vācaspatya*, *Śabdastomamahānidhi*, *Aśubodhavyākaraṇa* (1867 A.D.) etc. As attested to in his introduction to *Śabdārtharatna* (1852 A.D.), *Pāṇinian* studies had come to a stop in Bengal (*vikhyātaṃdākṣiṇātyādau punar vaṅgeṣvalīyata*). TTv prepared his *Āśubodha* at the instance of Prof. *Kṛṣṇakamala Bhaṭṭācārya* of Presidency College with an eye to providing learners with the *Pāṇinian* model at the backdrop of a variety of *non-P.* grammars taught in institutions. Verily, a plethora of edited texts of these grammars during the last 150 years came into being to cater to the learners' needs in Bengal even though those grammars were more or less large and unwielding, difficult to grasp, useless to some extent because of their treatment of very many uncommon words and irrelevant to the need of the day, as TTv would say.

Whether and how far Bengali grammar has derived from these *non-Pāṇinian* sources is a pertinent question indeed. It is evident that morphological analysis of Sanskrit loan-words has been effected here with suffixes, without any reference to *anubandhas*, to the tune of *post-Pāṇinian* practices. With *kārakas* and *samāsas* also there are points of agreement and divergences. Bengali grammar for obvious reasons, has refused to admit *sampradāna* as a separate *kāraka, karaṇa* and *adhīkaraṇa* are clubbed together and treated as a third *kāraka* beside *kartṛ* and *karman*. Unlike Sanskrit, *kāraka* in Bengali is a syntactic relation and not at all a semantico-syntactic one though one of the relata is a verb-form. Nomenclature of *kārakas* according to potentialities of an object in accomplishing an act is not however irrelevant altogether. In fact, theta-roles ascertained and assigned to different *kārakas* (by Prabal Dasgupta) are fairly comparable to the above.

The scheme of classification of compounds is more or less followed in Bengali with necessary adjustment. *Ekaśeṣa,* for example, is easily acceptable as a type of *dvandva* compound. Prof. Suniti Kumar Chatterji initially accepted the term viz. *prathamātatpuruṣa* for a compound between a nominative case-word and a primary derivative (e.g. *bāj-paḍā*) though it was originally meant for *ekadeśi-tatpuruṣa* e.g. *ardhaṃ grāmasya > ardhagrāmaḥ* in some *non-Pāṇinian* circles. Later Bengali grammarians would like to explain *hāti-kā̃dā*, *bāj-paḍā* etc. as *upapada-tatpuruṣa*. There are attempts at arresting the confusion regarding *avyayībhāva* and *prāditatpuruṣa* in the light of Sanskrit grammarians.

A comprehensive study on grammatical traditions and their impact on development on NIA grammars is sure to lead to interesting revelations of this kind.

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THE VOWEL AND CONSONANT SOUNDS OF INDIAN LANGUAGES

K. NAGAMMA REDDY
Osmania University, Hyderabad

Abstract

An attempt has been made in this paper to delineate the characteristic features of vowels and consonants (including the latter's sequences) in Indian languages. The number and type of vowel and consonant phonemes under classification in each language and in groups of languages are discussed. The paper deals with vowel typology not only with quality but also with length, nasalization and diphthongs across the languages. Consonant typology portrays the systems of plosives, affricates, nasals, fricatives, laterals, trills and semi-vowels. Under the plosives, the characteristic traits of voicing, aspiration and retroflection across the language families are presented along with patterning of consonants in sequences. An overall account of (i) the phonetic and phonological description of vowels and consonants, (ii) discrepancy in the analysis and symbolization of sounds, (iii) inadequacies of the available data, (iv) contradicting analysis of the same materials, (v) the problem of inclusion or exclusion of borrowed items influencing the native sound system and (vi) inconsistency in transcription-symbols for identical sounds, is discussed with suggestions for rectification and improvement to achieve a scientific methodology in the investigation of sounds. The restoration of prime place to phonetics, "an indispensable foundation of language", is essential to make any phonological studies of Indian languages meaningful and theoretically significant.

1. Introduction

The topic chosen for the present paper on the sounds of Indian Languages is rather a very vast field of wide range of interests and it will not be possible to discuss the speech sounds of even one language covering all its aspects. What is discussed here are the basic sound units (i.e., the vowel and consonant systems of Indian Languages) without going into the details of successive phonetic segments overlapping in time and interacting with each other as a coarticulatory phenomenon. The focus is to describe the phonologically contrastive vowels and consonants by considering the kinds of sounds that occur in the languages of India. There is, however, a considerable discrepancy in the phonological analysis and phonetic description as well as symbolization of sounds in Indian languages. Written descriptions of sounds and their representation by symbols vary a great deal in selection, which causes ambiguity and misinformation. There are problems associated with the way the Roman letters are used to represent the sound system of a language. The systematic phonetic transcription of tape-recorded speech samples of connected speech is required for all modern Indian languages. As pronunciation varies depending upon an individual's dialect, so are the symbols of transcription. The adaptation of transcription symbols by various authors for the same Indian language needs to be carefully considered. The individual authors have employed different nomenclature (within phonetics and phonology) for symbols, analysis and description of sounds, which show certain variation. No attempt has been made to systematize the symbols.

The linguistic data are rich and varied as expected in a multilingual society. Any attempt to give an overall account of the phonetic/phonological description, especially of vowels, in Indian languages raises several problems. As cited by Masica (1991), the inadequacy of the available data, different analyses of the same data, the inclusion of borrowed elements and their status, the nature of writing systems and consideration of higher level (i.e., grammatical) units are some of the basic issues. In the interpretation, or comparison, of data from different languages, all these factors have to be kept in mind.

Phonetic and phonological descriptions of Indian languages are mostly in the taxonomic model, which looks into the following three major points : 1. Phonemic inventory, 2. Some allophonic rules and 3. Phonotactics (related to consonant sequences). The observations and findings reported here are based mainly on my own research on different categories in Telugu and other Indian languages supplemented by works of other scholars such as the CIIL Phonetic Readers and various other published sources.

2. Vowel Phonemes

The number of vowel phonemes and their classification in each language and in groups of languages vary a great deal and somewhat controversial. For example, some scholars have preferred to distinguish a pair of vowels differing in quality alone, some others in quantity alone and still others by both in quality and quantity. The characteristic features of vowels according to their articulatory parameters like close (High) and open (Low), front and back, rounded and unrounded are indetermined. It is surprising to note from recent 1999 publication by CIIL, Mysore, that we need seven levels of parameters of vowel height in Indian languages, contrary to what has been reported by Ladefoged and Maddieson (1996) stating that their may be five distinctive vowel heights in languages of the world.

Vowels in Indian languages involve: 1. Different gestures of the vocal organs (nasalization, retroflexion, advanced tongue root, pharyngealization, glottalization, etc.), 2. Different phonation types (breathy voice, creaky voice, etc.) and 3. Different timing patterns or variations in dynamic properties (length, diphthong, etc.). Language specific differences in the analysis of diphthongs and identical vowel sequences pose certain problems. There are many ways in which vowels of Indian languages differ and it is important to obtain both articulatory and acoustic aspects of these vowels. This paper deals with all the parameters of vowel production, classification, description and symbolization. The use of symbols needs a fresh investigation. Observation on the classificatory system of vowels in Indian languages suggest that it is necessary to distinguish between close and open, front and back, rounded and unrounded, tense and lax, long and short, oral and nasalized, normal and breathy, glottalized, retroflexed, monophthong and diphthong rather than peripheral and interior or major and minor features of vowels.

A variety of vowel inventories is found among Indian languages. Apart from (i) tongue height differences of the basic vowel system, there are some languages with the distinctions of (ii) oral/nasal (iii) flat/plain, (iv) tense/lax, (v) long/short, (vi) checked/unchecked, breathy/normal or creaky/normal and (vii) front rounded/unrounded or back rounded/unrounded.

Certain features are unique to a given language family. For example, Dravidian has inherent length rather than tense/lax distinction. The Munda group of languages such as Kharia, Korwa, Korku and Mundari have no length or tenseness opposition which is found mostly in mid vowels in Bangali, Santhali, etc., in mid and long vowels in Gujarati, in all heights in Hindi, Punjabi, Sindhi etc. Flat/plain distinction of vowels is found in Sora in high and mid vowels. Tibetan has tense/lax as well as flat/plain in all three heights. Lhasa Tibetan combines length with tense/lax. Many Nicobarese and Tibetan languages have both length and tenseness combined. Flat/plain in addition to retroflexion is noticed in Badaga, Kodagu and Toda. Kodagu and Toda have half retroflex, retroflex and plain vowels.

In India, there are languages, which have:

1. Only oral short vowels, e.g. Andamanese and Tibeto-Burman family of languages vary from 5 (Apatani) to 21 (Irula).

2. Only oral short vowels and long vowels, e.g., Most of the Dravidian Languages and Sanskrit (long vowels are more in number than the short vowels). These vowels vary from 8 to 25 (Kodagu).

3. Only oral short vowels and nasalized (Manipuri, Sanskrit) vowels: 12 (Apatani), 21 (Hindi) and 20 in Punjabi and in Sindhi.

4. Oral short/long vowels and nasalized short/long vowels, e.g. Urdu, Kashmiri, Kurux, Kuvi, Bhumij, etc., 12 (in Ollari), 29 (in Kashmiri) and 30 (in Kurux). Nasalized vowels vary from 2 (Apatani) to 15 (Kurux) and long vowels vary from 5 (Sanskrit) to 10 (Balti) or 9 (Kodagu).

Some languages have voiceless vowels (e.g. Awadhi) and some others murmured vowels (e.g. Gujarati) and Gorum consists of creaky vowels.

Vowel phonemes of Indian languages are shown in Table 1 (a, b and c).

TABLE 1
VOWEL PHONEMES IN INDIAN LANGUAGES*

(a) FRONT

	Short						Long						Half long	
	O		OC	N	M	G	O		OC	N	M	G	O	
	UR	R					UR	R					UR	R
High	i	y	ï	ĩ	eH	i?	i:	y:		i:	i:H			
Lower-high	l			l̃										
Higher-mid	e	∅	ë	ě		e?	e:	∅:	ë:	ẽ:			e.	
Mean-mid	E		Ë	Ě										
Lower-mid	∈			∈̃										
Higher-low	æ			æ̃										
Low	ɒ			ɒ̃										

(b) CENTRAL

	Short						Long						Half long	
	O		OC	N	M	G	O		OC	N	M	G	O	
	UR	R					UR	R					UR	R
High	ɨ						ɨ			ɨ̃			ɨ'	
Lower-high														
Higher-mid														
Mean-mid	∂			∂̃			∂:				∂:H		∂'	
Lower-mid														
Higher-low	ɐ													
Low	a		ä	ã		a?	ã :						a'	

(c) BACK

	Short						Long						Half long	
	O		OC	N	M	G	O		OC	N	M	G	O	
	UR	R					UR	R					UR	R
High	ɯ	ü	ũ			u?	w	u:	u:	ũ:	u:H			u.
Lower-high		ʋ	ʋ̈	ʋ̃				ʋ̈:						
Higher-mid		o	ö	ō	oH			o:		ō:				o'
Mean-mid														
Lower-mid	^	⊃	⊃̃		⊃H			⊃:		⊃̃:				
Higher-low														
Low	*a*	*ä*							*ä:*					

* (O:Oral, UR:Unrounded, (R:Rounded, OC:Oral Centralized, N:Nasalized, M:Murmured, G:Glottalized)

According to Masica (1991) there are languages, which have no length or quantity (i.e. tenseness) distinction in vowels. These include *Kharia, Korku, Mundari, Marathi, Oriya, Ollari* etc. There are languages, which have quality distinction only in mid vowels, for example Assamese, Bengali, Burmese, Santali and Sora. The quality (i.e. tense/lax) distinction in all heights is noticed in Hindi, Awadhi, Punjabi, Sindhi etc.; quantity distinction in all three heights includes Sinhalese and South Dravidian languages, Khasi and Lushai. Length distinction is found in Brahui also but only in the high and low vowels and quality distinction in Pashto.

Some Indian languages have identical vowel clusters interrupted by a glottal stop or fricative, for instance, *Mundari, Kurukh, Kuvi* and *Kolami*. In some other languages, vowels are modified for quantity as in Tamil, for quality as in Hindi and neither for quantity nor for quality as in Oriya. Masica (1991) further observes that Dravidian languages with the feature of length seem not to exchange it for tenseness while a Munda language (Juang) with no length has acquired it, and an Indo-Aryan language (Sinhalese) has lost the tense/lax distinction altogether but developed long/short opposition in every vowel (probably under the impact of Tamil). While tense/lax distinction is found at all the three heights in standard Hindi, Lahnda, Punjabi and Sindhi; Gujarati has it only in mid and low vowels. Combined length contrast with tenseness at every height is found in Lhasa. Nicobarese combines length contrast with tense/lax but only in the mid vowels.

Vowels in some Indian languages are characterised further (phonemically) by both length and nasalization. However there are differences in the phonemicization of the vowels which differ in length or nasalization or both (Nagamma Reddy, 1998). For example, long vowels taken either as separate phonemes or as corresponding short vowels plus the suprasegmental phoneme /:/ ‘Length’. Alternatively long vowels can be taken as basic plus the ‘phoneme of shortness’. The number of phonemes, thus may be the same but basic inventory would be different. From this viewpoint, the major Dravidian languages like Telugu, Kannada, Tamil and Malayalam have only six vowel phonemes (including length), instead of ten when length is treated as a separate phoneme.

Nasalized vowels, as unit phonemes or as corresponding oral vowels plus the /~/ ‘nasalization’ also lead to significant differences in the inventory of phonemes, similar to the long vowels. For example, all the ten vowels are nasalised in Konda and Kuvi, and hence when the nasalisation of vowels is conceived of as a separate phoneme, the number of nasalized vowel phonemes is reduced into eleven (including nasalization) from twenty. Nasalization plays a distinctive role in some languages. The length and nasalization are treated as separate phonemes when all the vowel function as long and/or nasalised. In such cases, all Indian languages may have to be treated the same way for the sake of uniformity and for the neatness of the pattern.

Three degrees of vowel height is found in all the languages. The feature rounding is contrastive only in some languages (e.g. Toda). Retroflex vowels also have been noticed in Badaga, Toda and Kodagu. There are other features that may be used to increase the number of distinctions which can be made with regard to the place of vowel in the syllable/word. These are nasalization, length and diphthongization. The vowel system is complemented by another 10 nasalized vowels in Kuvi. Though only two degrees of contrast in length has been noticed, we may need to distinguish between three degrees of length(i.e., short, half long and long) in such languages as Balti.

There are problems in phonological analysis and the classification of vowel phonemes and their inventory arising from the way length and quality are handled independently or in combination. Some pairs of vowel phonemes are phonetically characterized by differences of both relative duration and of phonetic quality. Combining both quantity and quality in the phonological representation, transcribing the pairs accordingly may have a better solution (i) in the designing of pronunciation dictionaries for foreign learners (ii) may be helpful for particular pedagogical applications in teaching foreign language and (iii) to improve the intelligibility and naturalness of artificial speech produced by computer from key-board-typed sentences. Phonological symbols themselves are a source of confusion in that different descriptions have used different symbols and analysis for the same sound, or the same symbols for different sounds without implying any analytical-theoretical disagreement.

Nasalization of vowels plays a significant role in certain Indo- Aryan languages such as Hindi, Punjabi, Gujarati, Marwari, Sindhi, Konkani etc. But unfortunately there is a great deal of discrepancy in the description of nasalized vowels even of the same language and Hindi can be taken as one of the examples. For instance, in Dixit (1963, there are no nasalized mid vowels, but for Mistra (1967) and Kelkar (1968) there is phonemic nasalization of all vowels, for Narang and Becker (1971) all vowel nasalisation is predictable and for Ohala (1975) predictability is different for short and long vowels either phonetically or morphologically.

Some languages have only 2 diphthongal vowels (e.g. Badaga) and others such as Bengali as many as 25 diphthongs. The following diphthongs are found in Angami, Khasi, Marathi, Mundari, Sanskrit, Shina etc.:

ai	Sanskrit and Mundari
au	Sanskrit and Mundari
iu	Khaši and Marathi
∂i	Angami, Marathi and Nicobarese
ei	Nicobarese and Shina
ui	Mundari and Nicobarese
ie	Angami and Khasi
ua	Mundari
oa	Khasi and Mundari
uo	Angami and Khasi
eu	Angami

Oral short diphthongs (Mundari)	Long diphthongs (Nicobarese)	Stressed diphthongs (Shina)	Nasalized diphthongs (Mundari)
ae	*e:i*	*é i*	*ũ i*
oe	*∂:i*	*é u*	*∂̃ i*
ao	*o:i*	*ú i*	*ã e*
eo		*ó i*	*ĩ a*
ea		*á u*	*õ e*
ia			

3. Consonant phonemes

From Table 2 (next page), we can see that there are about 80 consonantal phonemes established for languages of India. They vary in individual languages between a minimum of 14 consonants (e.g. Ao) and a maximum of 38 (e.g. Toda). The long consonants treated as unit phonemes in languages are excluded from the table. This contains many of the phonemes that are confined only to a single language or a group of languages. For example, labio-dental affricates and aspirated semi-vowels are noted only in Angami; retroflex lateral fricative in Ao; voiceless laterals in Toda; implosives in Sindhi; unreleased glottalized stops and glottal stop in Munda languages; uvular alveolar stops in *Malayalam, Kota* and some dialects of Tamil, retracted and unretracted affricates in Telugu, Marathi, Konkani and Kannada; palatal stop in Urasa Tibetan; labio-dental fricative in Urdu, Lushai, Naga and Toda of different language families. The following details reveal some of the typical phonetic characteristics of phonemic systems and subsystems of each language and/or family of languages.

3.1 Plosives

All languages, except Sindhi, have plosives only and no other stops like ejectives, implosives or clicks. Sindhi has five contrasting stops at each

TABLE 2

THE CONSONANT PHONEMES IN INDIAN LANGUAGES*

PoA	Bl		Ld		DDPD		Al		PaR		Pla		Pl		Velar		Bv		UP		G	
Voicing	vl.	vd.	vl.	vd.	vl.	vd.	vl.	vd.	vl.	vd.	vl.	vd.	vl.	vd.	vl.	vd	vl.	vd	vl.	vd	vl.	vd.
Plosives asp.	ph	bh			th	dh			th	dh					kh	gh	k̟	G̟				
Plosives unasp.	p	b			t	d	t̲	d̲	t̟	d̟			c		k	g			q	G	?	
Implosives		ɓ				ɗ						ĵ								ɠ		
Glottalized stop	p'	b'				d'					d'	ĵ'			k'	g'						
Affricates asp.			pfh				tsh	dzh			čh	ĵh										
Affricates unasp.			Pf	bv			ts	dz			č	ĵ										
Nasals asp.		mh				nh		nh		ṇh		nh			ŋh							
Nasals unasp.		m				n		n̲		ṇ		n			ŋ							
Approx. Trill						r		r̲		ṛ										R		R
Trill & flap asp.								rh		ṛh												
Lateral Approx.						l	ɭ	l		ɭ		ɭ										
Lateral asp.								lh		ḷh												
Fricatives unasp	Φ	B	f	v	θ		s	z	s̟	z̟	š	ž							x	r	h	h
Fricative asp.								sh	zh			šh										
Semivowels unasp.		w										y										
Semi vowels asp.		wh										yh										
Unreleased	p				t		t				c				k							
Palatalized	p^y	b^y			t^y		d^y	n										g				
Syll. Nasals		ṃ							ṇ									ŋ				
Pre-asp. nasals		hm							hn													
Palatalized Lat.									Ly													
Labialized Flap									rw													
Nasalized Flap.									r													
Pre-asp. Flap								h	r													
Labialized Stop		p^w	b^w																			
Lateralized Stop					t^l																	
Unreleased Stop					t<		t<		t̟<		c<				k<							

* PoA = Place of articulation; Bl = Bilabial; Ld = Labiodental; DDPD = Dental dentialveolar or post-dental; Al = Alveolar; PaR = Post-alveolar (Retroflex); Pla = Palato-alveolar or alveo-palatal; Pl = Palatal; Bv = Back Velar; UP = Uvular or Pharyngeal; G = Glottal; Vl = Voiceless; Vd = Voiced; Asp. = Aspirated; Unasp. = Unaspirated; Approx. = Approximant.

place of articulation, for example /p/ in *pənu* 'leaf', /ph/ in *phəṇu* 'snakehood' /b/ in *bənu* 'forest', /bh/ in *bhənəṇu* 'lamentation' and /ɓ/ in *ɓəni* 'field'. Most of the languages have plosive consonants produced at 5 different places of articulation. It has been said (O'Connor, 1973) that "It is quite common for fricative systems to have more places of articulation than the stops". This apparently is not the case with some languages like Toda and Malayalam at least.

If we observe the phonological system of Tamil and Telugu (Nagamma Reddy, 1992a), they fall into two different types. The Telugu system, by contrast to Tamil system recognizes both voiced and voiceless series of plosives as illustrated below. The phonological voicing are not the same in the two languages. For example, in word medial position Telugu contrasts short voiced with short voiceless plosives and long voiced with long voiceless plosives, whereas Tamil contrasts only a long voiceless plosive with a short voiced one. Although Tamil is said to have no voicing contrast in word-initial position, there are many loan words with word-initial voice plosives which are rendered voiceless by the illiterates but pronounced as voiced by the educated speakers, for example *balam* 'strength', and *gate* 'fate'. Spectrograms of such plosives in words are characterized by the presence of voice bar.

Thus, Tamil and Telugu have very different surface sound patterns. A simple phonemic analysis which takes the voicing between plosives to be a primitive feature of the system will not reflect reality in the languages. Out of 17 places of articulation used in the languages of the world today (Ladefoged and Maddieson, 1996), we have about 11 contrasting places of articulation (Nagamma Reddy, 1992a).

The following 16 types of stop consonants are found in Indian languages:

1. Voiceless unaspirated stops (all languages)
2. Voiced unaspirated stops (in most of the languages)
3. Voiceless aspirated stops(in most of the languages)
4. Voiced aspirated stops (in most of the languages)
5. Voiceless labialized (Mishmi)
6. Voiced labialized (Mishmi)
7. Voiceless palatalized (Apatani)
8. Voiced palatalized (Apatani)
9. Voiceless unaspirated lateralized (Apatani)
10. Voiceless aspirated lateralized(Apatani)
11. Voiceless unaspirated flapped stops (Hindi)
12. Voiceless aspirated flapped stops (Marathi)
13. Voiceless glottalized stop (Gutob, Mising, Mishmi and Santali)
14. Voiced glottalized stop (Gutob, Mising, Mishmi and Santali)
15. Voiceless unreleased stops (Parengi-Gorum and Andamanese languages)
16. Voiced implosives (Sindhi)

Indian languages exhibit 2 to 8 series of stop consonants.

- Two series of stops in Dravidian
- Three series of stops in Tibeto-Burman and Andamanese
- Four series of stops in Indo-Aryan, Gutob and (Vd, Vl, Asp., Unasp.)
- Five series of stops in Sindhi (Four + implosive), Santali (Four + Glottalized stops)

- Six series of stops in Mising (Vl unasp., Vd Unasp., Vl asp., Vd asp., Vl glottalized, Vd glottalized)
- Seven series of stops in Lushai (Vl unasp., Vd unasp., Vl asp., Vl unasp. Flap, Vl lateralized, VI asp. lateralized)
- Eight series of stops in Mishmi (Vl unasp., Vd unasp., Vl asp., Vd unreleased, Vl labialized, Vd labialized, Vl palatalized, Vd palatalized)

Language specific sounds

The following phonetic features are characteristically unique for languages cited as examples.

- Uvular voiced stop in Malto
- Back velar voiced unaspirated stop in Gorji
- Retroflex affricate in Shina
- Aspirated fricative in Mising
- Labiodental nasal in Angami
- Nasal stop in Lamani
- Retroflex lateral frictionless continuant in Tamil and Malayalam
- Syllabic lateral flap in Juang
- Lateral fricative in Balti
- Voiceless literal in Toda and Ladakhi
- Nasalised retroflex flap in Sindhi and Juang
- Voiceless trill in Ladakhi and Konda
- Alveolar voiceless stop in Malayalam and some Andamanese languages
- Retroflex voiced continuant in Sanskrit
- Dental affricate in Shina
- Palatal stop in Lasa Tibetan
- Implosives in Sindhi
- Pre-glottalized consonants in Munda and Sindhi
- *ts/t* in Telugu, Marathi, Kannada etc. have these as allophonic. Contrasting in Sinha and Burushaski
- */t̪ /t/t̝* / Contrast in Malayalam, Toda, Kota and Tamil
- Only */t/* in Assamese, Garo, Khasi, Boro, Naga, Kachin and Burmese

Uvular plosive is found in Urdu. Glottal stop is found in Kuvi as in the neighbouring Munda languages. All major Dravidian languages do not have a glottal stop as a phoneme. Further, Malayalam consists of maximal contrast in the nasal phonemes in the world languages (Ladefoged and Maddieson, 1996) contributing to the knowledge of the sound patterns of languages in general. Most languages have two laterals, one trill and two semivowels, Malayalam again distinguishes between two types of trills (Nagamma Reddy and Srikumar, 1987). Sanskrit consists of both vocalic and consonantal liquids (i.e. *r* and *l*), The vocalic *ṛ* and *ḷ* function as syllabic segments. Before we discuss the details of all types of consonants, a few observations may be added on voicing, aspiration and retroflexion of consonants as these are important features of Indian languages.

Voicing

Voicing is a distinctive feature in certain classes of sounds other than plosives as illustrated below:

- Voiced vs. voiceless fricatives occur in Assamese, Bodo, Kolami, Lusai, Shina, Toda, etc.
- Voiceless vs. voiced nasals in Burmese, Lushai, Naga, Palaung, etc.
- Voiceless vs. voiced liquids are found in Burmese, Lushai, Brahui, Tibetan and Toda (Voiceless vowels are also found in Awadhi).

Aspiration

Indian languages are unique among the world's languages in having contrast between aspirated and unaspirated plosives and affricates in both the voiceless and voiced series, i.e. *p* vs. *ph* and *b* vs. *bh* etc. Hindi for example, has contrasting plosives both voiced and voiceless, aspirated and unaspirated in such words as *pal* 'to rear', *phal* 'knife blade', *bal* 'hair' and *bhal* 'forehead'.

There is a lot of variation in the use of aspiration. Most of the Dravidian Languages, as Indo-Aryan languages, have a series of voiced and voiceless aspirated stop contrast with unaspirated ones. But aspiration of nasals and liquid is a characteristic feature of some Indo-Aryan languages but not Dravidian. In the case of aspiration it is the Indo-Aryan that influences the Dravidian. The contrast of aspiration itself varies, as shown below, according to the classes of sounds. Some languages have aspiration in stops only, some in affricates also and some others in other classes of sounds as well.

- No aspiration contrast: Badaga, Garo, Juang, Kodagu, Kolami, Kota, Kuvi, Mundari, Tamil, Tulu, Toda etc.
- Aspiration contrasts in voiceless stops only: Kashmiri, Khasi, Naga, Punjabi, Shina and Tibetan.
- Aspiration in loan words only: Kannada, Telugu and Kurux.
- Aspiration in both voiced and voiceless stops: Most of the Indo-Aryan languages.
- Aspiration contrast in nasals: Hindi, Marathi, Naga etc.
- Aspiration in liquids: Marathi, Oriya etc.

- Aspiration contrast in semivowels: Marathi and Naga.
- Aspiration contrast in continuants : Burmese.
- Aspirated (or murmured) vowels : Gujarathi.

Retroflexion

The presence of retroflexes is a characteristic feature of Indian languages in that most of them have series of retroflex consonants. Malayalam opposes the feature of retroflexion both dental and alveolar as in *muttu* 'pearl' *muṯṯu* 'density' *muṭṭu* 'knee'. There have also been some instrumental studies (articulatory and acoustic) of retroflex consonants. Ramasubramanian and Thosar (1971) specified the acoustic parameters needed for machine synthesis of retroflexes. Balasubramanian (1972) and Nagamma Reddy (1981, 1986) have made a thorough instrumental investigation of retroflexes in Tamil and Telugu in various positions and contexts. The study by Nagamma Reddy deals with the exact place of articulation of retroflex plosives in Telugu and finds a systematic difference in their production due to difference in vowel context, length of the consonant and voicing of the consonant. The variation found in Hindi, Telugu and Tamil in the place of tongue contact and degree of retroflexion in producing retroflex plosives ranging from alveolar with very slight curving of the tongue to palatal with considerable retroflexion is found in Telugu itself. Not only languages show difference in their production, but also depend on the context (cf. Nagamma Reddy 1986). It is believed that the development of distinctive retroflexes in Indo-Aryan is a result of Dravidian influence (Emeneau, 1956). This borrowing seems to occur in spite of the fact that retroflexes are considered to be 'marked' by generative phonologists and this should presumably be less likely to be borrowed (Ohala, 1983).

Languages also vary in the use of retroflexion in the manner categories of sounds as shown below.

- No retroflex contrast: Assamese, Garo, Khasi, Naga, Burmese etc.
- In stops: Bengali, Nepali, Newari, Santali, Bhojpuri, Gondi, Awadhi, Kashmiri, Khadiboli, Tibetan and Dravidian languages.
- Stops and Nasals: Sindhi, Mundari and Dravidian languages.
- In lateral: Dravidian languages
- In laterals and Nasals: Oriya, Konkani, Marathi, Telugu, Badaga and Kodagu.
- In Nasal and Liquid: Punjabi, Brahui etc.
- In Flap: Pajri, Tamil, Malayalam, Toda, Kota and Manda.
- In Fricatives: Wakhi, Burushaski, Shina and Pashto.
- In Affricates: Shina, Wakhi and Burushaski.

Retroflex flap as a phoneme is a characteristic feature of the Indo-Aryan or some Munda languages, not Dravidian.

3.2 Affricates

Places of articulation: Affricates involve four places of articulation, i.e.; Labiodental, Dental/Alveolar, Retroflex and Palatal.

pf	*ts*	*ṭṣ*	*č*
b^v	*dz*		*ǰ*
pfh	*tsh*	*ṭṣh*	*čh*
dzh		*ǰh*	

Affricates vary from 1 to 4.

- 4 series of affricates in Munda and Dravidian.
- 3 series of affricates in Angami, Balti, Kashmiri, Kharia, Mishimi, Punjabi etc.
- 2 series of affricates in Naga, Khasi, Kodagu, Juang, Kasaba, Kui, Mundari, Tamil, Toda, Tulu etc.
- 1 affricate in Bodo, Nicobarese and Yeruawa.

3.3 Nasals

Malayalam is well known among the world's languages for maximal six-way system in nasals. All languages have */m/* and */n/*.The other three nasals */ṇ, ñ, ŋ/* excluding dental nasal are found in Sindhi and a few others. Some languages have */m, n, ṇ/* while others have */m, n, ŋ/* only. One or two Tibeto-Burman languages appear to have voiceless nasals also. Aspirated nasals also are characteristic of some languages (for instance, Marathi). Distribution of nasals among Indian languages is shown elsewhere in Nagamma Reddy and Kanakavalli (1994). Both phonetic and phonological issues associated with the nasal consonants in Indian languages have been examined. The issues discussed include: (1) The treatment of nasals by the traditional grammarians (2) Phonetic/Phonological inventory (3) Aspirated and unaspirated (4) Voiced and voiceless (5) Short and long (6) Allophonic variants (7) Distributional constraints (8) Neutralization and the archinasal phoneme 'N' (9) Syllabic nasals (10) Mono-vs-biphonemic interpretation of aspirated and long nasals (11) Nasalisation of vowels and consonants and 12) Acoustic structure and the factors effecting the duration of nasals.

There is a great deal of variation in the use of nasals and their distribution in Indian languages as shown below. They involve seven to eight places of articulation, which no other language spoken outside India has got. There are many fruitful areas of investigation with regard to nasals, for example, the alterations of nasals in Sanskrit and other dialects of Indian languages. Basic research in languages of India both into the acoustic structure and the linguistic function is still a desideratum.

Nasal system types	**Examples of languages**
1. Three nasals	
a) *m, n, η*	Manipuri, Malto, Oriya, Bengali and Boro.
b) *m, n, ṇ*	Gojri, Telugu, Toda, etc.
2. Four nasals	
a) *m, n, η*	Kharia, Khasi, Sora, Kurukh, Mishmi, Punjabi, Parji.
b) *m, n, ɳ, η*	Gondi, Kannada, Kota, Konda, Kuvi, Mundari, Pengo, Tamil.
c) *m, n, ɲ ŋ*	Konkani.
d) *m, n, n̰, ɳ*	Kasaba.
3. Five nasals	
a) *m, n, ɳ, ɲ, η*	Badaga, Juang, Koraga, Remo, Sanskrit, Ṣindhi, Vagri-boli.
b) *m, n, η,* (m^h), (n^h)	Hindi (please see the note below).
4. Six nasals	
a) *m, n, ṇ, ɳ, ɲ ŋ*	Malayalam.
b) *m, n, η,* m^h, n^h, η^h	Marathi.
c) *m, hm, n, hn, η, hη*	Mizo.
5. Eight nasals	
a) *m, m, n, nn* m^h, n^h, η^h	Angami.
b) *m,* m^h, *n,* n^h, n^h, η^h, η^h	Lotha.

Note: There is also a variation in the number of nasal phonemes in a particular language. For details see Nagamma Reddy and Kanakavalli, 1994.

Distribution of Nasals in Indian Languages

Phoneme	**WI, M and Final Position**	**Examples**
(i) Unaspirated		
/m, n, η/	All positions	Ao-Naga, Manipuri
	Initially and medially	All languages
/m,n/	All positions	Gujarati, Marathi, Manipuri, Ao-Naga, Mundari, Kota and Urdu
/m/	Initially and medially	All languages
	All positions	Telugu, Gojri, Gujarati,

		Marathi, Manipuri, Ao-Naga, Mundari, Kota and Urdu
/n/	Initially and medially	All languages
	All positions	Kuvi, Kota, Urdu, Kashmiri, Manipuri, Gujarati, Marathi and Mundari
/η/	Initially and medially	All languages
	All positions	Kota, Sema, Telugu, Angami, Balti, Tangkhul-Naga and Thaadou Manipuri
	Initially and medially	Sema, Angami and Gujarati
	Only medially	Urdu, Gojri and Kashmiri
	Medially and finally	Marathi and Kota
/n/	All positions	Kharia
	Initially and medially	Gojri, Sema, Angami, Lotha, Malayalam, Balti and Mishmi
/ṇ/	Only medially	Kota, Telugu, Marathi, Kuvi and Tamil
	Word initial syllables	Manda
	Only medially	Telugu, Gojri, Brokskat, Mundari, Tamil and Malayalam
	Medially and finally	Marathi, Hindi, Gujarati, Kota, Kuvi and Punjabi

(ii) Aspirated

/mh, nh/	All positions	Kashmiri
	Initially and medially	Marathi (Konkani only
	Medially	in clusters)
/nh/	Initially and medially	Lotha
	Only initially and medially	Angami
/ηh/	Only medially	Lotha

(iii) Voiceless

/ṃ, ṇ/	Initially, medially	Mizo and Burmese

(iv) Long

/mm, nn, ṇṇ ηη/	Medially	Malayalam
/mm, nn, ṇṇ/	Medially	Dravidian languages

/mm, nn/	Medially	Indo-Aryan languages
/ŋŋ/	Finally	Mishmi

[WI = Word initial, M = Medial]

3.4 Fricatives

Among fricatives, a maximum of seven way contrast is found in Toda alone and voiced and voiceless contrast. Fricatives vary a great deal in Indian languages (Nagamma Reddy, 2000).

• *c/s* contrasts	Telugu, Kolami, Kurux, Maithili, Marathi, Mundari and Awadhi
• *Retracted/unretracted s/s*	Bodo, Brahui, Burmese, Sora, Gujarati, Kachin, Khasi, Naga, Lahnda, Sindhi, Tibetan, Tulu, Malayalam, Kannada, Tamil, Telugu and Urdu
• *s/ʃ* and *flat s*	Toda, Shina, Pashto
• *s/ʃ/ṣ*	Toda
• *k/x*	Assamese, Brahui, Kurux, Toda etc.
• *t/ts*	Toda and Burmese
• *p/f*	Lushai, Naga, Pashto and Palaung

3.5 Laterals

These include three places of articulation: dental, alveolar and post-alveolar/retroflex, aspirated vs. unaspirated: Angami, Ao-Naga, Awadhi, Lotha, Marathi, Sema etc. Voiced vs. Voiceless literals are found in Burmese, Brahui, Tibetan and Toda.

3.6 Trills and Flaps

These include five places of articulation : dental, alveolar, retroflex, palatal and glottal. These may be voiced and voiceless. Minimum of 1 and maximum of 4 types occur. Types of trills and flaps vary from language to language or group of languages as shown below:

- Voiced unaspirated alveolar trill in most languages
- Voiced unaspirated alveolar flap in Ao-Naga, Kannada, Malayalam, Marathi, Hindi etc.
- Voiced unaspirated retroflex flap in Hindi.
- Voiceless alveolar trill in Konda and Ladakhi
- Voiceless nasalized palatal trill in Abujmaria
- Voiceless nasalized glottal trill in Vagriboli
- Voiceless nasalized dental trill in Toda
- Voiceless nasalized alveolar flap in Juang
- Voiceless nasalized alveolar labialized flap in Mishmi

3.7 Semi Vowels

Two places of articulation: Bilabial and Palatal. Both aspirated and unaspirated semi-vowels are found in Angami and Marathi.

4. Consonant sequences/clusters

Patterns of arrangement of phonemes (i.e., phonotactics) also differ from language to language., though certain similarities can be noticed throughout. The formation of consonant clusters and sequences of both Telugu and some tribal languages of South Central group have been analyzed by Nagamma Reddy (1980), and Ramakrishna Reddy and Nagamma Reddy (1986). The general notion that Dravidian languages are devoid of initial clusters does not apply to the Kondh Dravidian, in that these languages are replete with word initial clusters such *pṛ* or *kṇ- pṛ a:* 'old', *kṇim* 'waist' etc., which are the result of metathesis and compensatory lengthening of vowel. Geminates are common to all languages. Toda seems to be different from Telugu in using non-homorganic nasal + stop sequences such as *-np-* and *-nk-*.

I have analyzed with a comparison of English (Nagamma Reddy, 1987), the salient distributional patterns and restrictions of consonant combinations in Telugu, Hindi, Kharia and Purki belonging to the Dravidian, Indo-Aryan, Munda and Tibeto-Burman family of languages respectively, in light of the typological universals proposed by Greenberg. It is a known fact that every language does not exploit all the possible combinations of its phonemes in the word and the syllable or the morphophoneme, and not all languages posses consonant clusters in all positions of a word. Patterns of word initial and word final three consonant clusters in a couple of languages are shown next.

Fig. 1: Patterns of Initial CCC Clusters

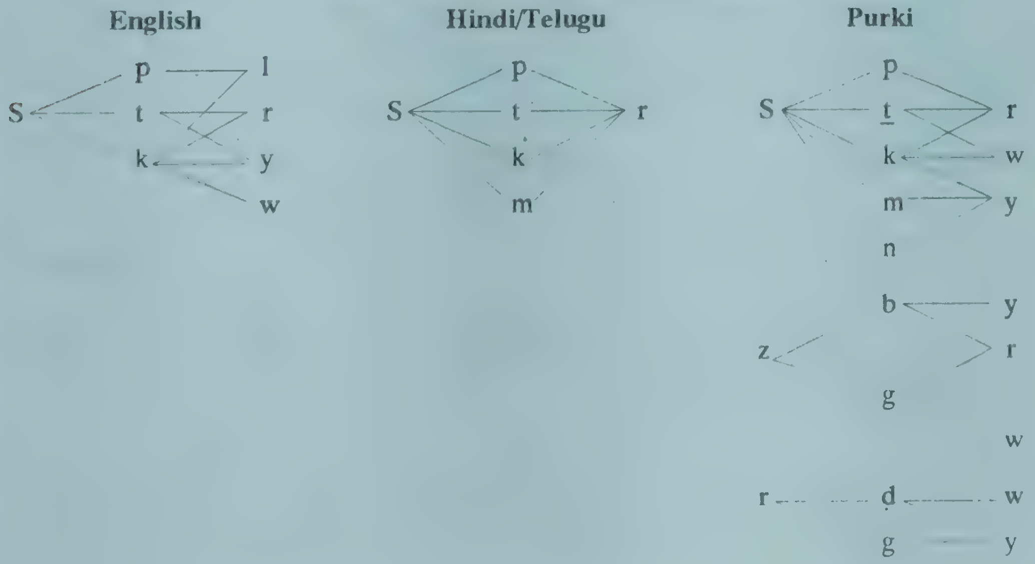
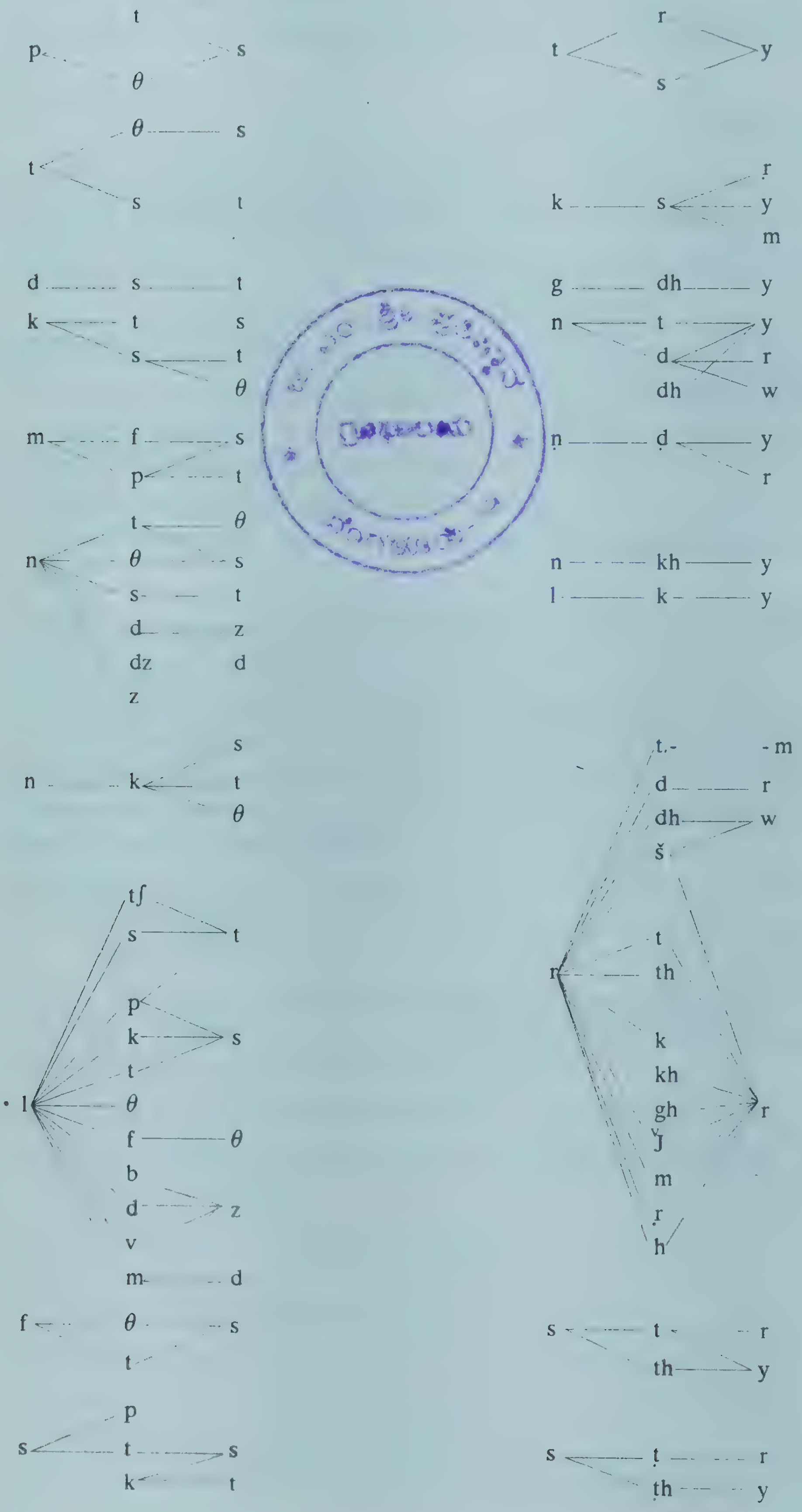


Fig. 2: Patterns of Final CCC Clusters


English

Hindi

5. Conclusion

In this paper an attempt has been made to delineate the characteristic features of segmentals (i.e. vowels, consonants and consonant sequences) in Indian languages, reserving the analysis and description of suprasegmentals for future study.

Each language family has typical characteristic phonetic/phonological features (Nagamma Reddy, 1992b). For example, Tibeto-Burman languages are known for tone, Munda languages for glottalized unreleased stops, Indo-Aryan for aspiration, and nasalization, and Dravidian for retroflexion and length distinction. Dravidian languages (apart from the length and retroflex distinction) in contrast with other families of languages are characterized further by lack of nasal vowel phonemes, lack of vowel clusters, while geminate consonants are common; the word initial clusters are rare, the stress is not contrastive and all are intonational languages.

Among suprasegmentals tone has been studied to some extent. Except Gorji and Punjabi of Indo-Aryan, the other Indian languages which have functional tone are mostly Tibeto-Burman. These languages show 2 to 5 contrasting tones. For example, Boro has 2 tones and Sema, Ao-Naga, Lotha, Manipuri and Mising have 3 tones. Lushai, Mao-Naga and Mishmi have 4 tones and Angami has 5 tones as shown below.

2 tones	3 tones	5 tones
1. High falling	1. High or Raising	1. High
2. Mid falling	2. Mid or level	2. Mid
(Boro)	3. Low or falling	3. Low
	(Punjabi, Manipuri	4. Mid-rise
	Mising, Sena	5. Low-fall
	Ao-Naga)	(Angami)

Examples

Lotha:	*o:Jó*	'brother'	Missing:	*rá*	'to narrate a story'
	o:Jò	'fish'		*rã*	'cooked rice'
				rà	'chase the put point of the animal'

Mishmi:	*ṭhá η*	'dead'
	ṭhà η	'hair'

Stress in Sanskrit seems to generally fall on a long syllable in the middle or towards the end of the word. It is generally the lengthening which gives the prominence to syllable in Sanskrit, Dravidian and other Indian languages. Some languages have initial stress and some others like Hindi have non-initial syllable stress. A very few studies on accent and intonation have been done. Further research in this area on languages of India is needed.

The impact of Indian phonological systems on theoretical phonology is somewhat minimal. Significant data of the Indian phonology deserve analysis and description from different perspectives. This requires phonological and phonetic fieldwork on spoken varieties of literary languages and their dialects, on minor, tribal and minority languages. Finally phonetics, is indispensable foundation of linguistic analysis has to be restored to its prime place if phonological studies of Indian languages have to be made meaningful for any kind of theoretical work and to develop speech recognition systems for our languages.

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OUTER SIRAJI: AN SVO LANGUAGE

J.C. SHARMA
CIIL, Mysore

Abstract

In India except Kashmiri and Khasi (a Mon-Khmer language) most of the languages so far studied follow SOV word order. In Himachal Pradesh some languages like Bushehri, Outer Siraji and Inner Siraji, which belongs to Western Pahari group of languages, seem to follow SVO word order like Kashmiri. There may be some more Western Pahari languages with SVO word order but data is not available at the moment to check this possibility. This paper is restricted to Outer Siraji spoken in Nirmand and Ani blocks of Kullu district of Himachal Pradesh. The paper establishes that languages belonging to the same language group may show typological differences for various reasons[1]*. There is a possibility that Western Pahari group of languages of Indo-Aryan language family initially had SVO word order that may be changing to SOV due to the influence of Panjabi and Hindi, the dominant languages of the region. Another possibility is that the SVO order attested in these languages can be explained by language internal facts rather than by looking for external factors/reasons. Only a detailed study can provide the actual picture in this regard. Besides, the claims made in the typological studies by Greenberg, Vennemann and Comrie need to be examined in the light of the empirical data from Outer Siraji. This paper is an attempt to identify the typological significance of Outer Siraji as an SVO language. It argues that Vennemann's claim that SOV order gives way to SVO in the course of time is not the only possibility; rather the direction of change in word order norms is not unidirectional but cyclic.*

1. About the Language

Outer Siraji is spoken in the outer part of Kullu district in Himachal Pradesh in India. The whole Siraji region is divided (by the Jalori Pass) into two parts: Inner Siraj, the northern part and Outer Siraj, the southern part of Kullu district. The Outer Siraj area comprises of two blocks Ani and Nirmand. River Satluj separates Kullu from Shimla, the capital city of the state

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1. The Brahmins of Nirmand village claim that their forefathers were brought to Nirmand from various parts of the country including Kashmir by Lord Parshuram who they claim had established this village. If this is true then the closeness of Outer Siraji to Kashmiri in respect to word order (SVO) may need further study.

of Himachal Pradesh. Inner Siraj is the inner side/part of Kullu district and Outer Siraj is on the outer side close to the boundary of Shimla district.

Grierson has classified the languages of this region under different Pahari groups of languages such as Keonthali group and Satluj group. He has classified Outer Siraji, along with Sodhochi, Kotgarhi and Bushehri, under the Satluj subgroup of Western Pahari group of languages. However, Grierson does not provide sample (data) of Outer Siraji. He observes that Outer Siraji has closeness with Sodhochi or Kotagarhi and Bushehri whereas Inner Siraji has closeness with Kullui. In the census of 1961 Siraji (both Outer and Inner Siraji jointly) was returned by 6859 speakers of Himachal Pradesh. In this census Outer Siraji has been classified under Kullui group of dialects of the Western Pahari group of languages. The actual status of the languages spoken in the entire Siraji areas is till to be finally determined (with reference to three names; Siraji, Inner Siraji and Siraji-Kashmiri as mentioned in the Census 1961). The existing literature does not give the actual position of Outer Siraji as well as Inner Siraji.

1.1 The theoretical background

In standard literature, six possible basic word orders (considering the word order possibility in a sentence with a transitive verb) has been given for a natural language: SOV, SVO, OSV, OVS, VSO and VOS. However, according to Greenberg (1966b) and Lehmann (1971), only SOV, SVO and VSO are the three significant word order attested in natural languages. Since the publication of Greenberg's paper on language universals, subsequent research in language typology has discovered languages with other logically possible word order[2]. Greenberg tries to see language universals in the light of the rules as opposed to the one in which typologists arrive to a generalization based on the commonly shared features in most languages. Comrie (1981) is a critique of generative paradigm that is to be found, in varying degrees, in the work of most of the typologists. He argues that one can only define the notions of possible human language on the basis of study of a single language. However that need not be applicable to all the languages of the world.

Greenberg's (1966a) word order universals are implicational universals, which are attempts to define co-occuring, and non-cooccuring word patterns. For instance, VSO word order rules out the coexistence of postposition in that language. In Greenberg's 30 language samples, the SVO languages seem to share properties both with VSO and SOV. The contrast is significant only between SOV and VSO languages. For example, from the sample of 30 languages, 6 VSO and 10 SVO languages have prepositions and 3 SVO languages and 11 SOV languages have postpositions. That shows that the VSO languages have prepositions, the SOV languages have postpositions and the SVO languages prefer prepositions but can also have postpositions. Further, the pattern that an adjective follows the head noun is attested in all the three types (SVO, SOV, VSO) as per the Greenberg's samples but the pattern in which as adjective precedes the head noun can occur only in SVO and SOV languages and not in VSO. Thus, the pattern in which adjective follows the head noun (NA) can be the characteristic of VSO languages (if exceptions are not found). The implication is that SVO languages share features both with VSO and SOV languages. In the next sections we examine the word order characteristics of Outer Siraji.

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[2] Greenberg himself (1966: 110) has drawn attention to the existence of a VOS language named Coeud 'Alen. Other examples are Malagasy and Gilbertese (see Keenan 1978, and Pullum 1981). Hixkaryana is described as an OVS language (Pullum 1976 and Pullum 1981). They have also claimed the existence of some OSV languages.

2. The word order facts in Outer Siraji

Outer Siraji like Kashmiri and Khasi departs from the typical SOV word order norm found in most of the Indic languages. In this respect it also differs from other Western Pahari group of languages such as Sirmauri, Sorachali, Baghati, Keonthali, etc. Outer Siraji shows SVO word order. The copula as well as the main verb occur in the sentence medial position, i.e., after the subject. (1-4) are illustrative examples:

(1) *ɔ* *a* *kukkər*
this be-PRE dog
'This is a dog.'

(2) *ram* *t-ɔ* *ḍakṭər*
Ram be-PST-M doctor
'Ram was a doctor.'

(3) *rama* *agɛ* *a* *čɔn* *gawi*
Ram with be-PRE three cows
'Ram has three cows.'

(4) *ti-nɛ* *ki-ɛ* *jɔ* *kam*
they-ERG do-PST-M this work
'They did this work.'

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In the sentences (1-4) the verb occurs in the second position after the subject of the sentence and the object/complement occurs in the sentence final position. Below we take up this issue in detail and examine different types of sentence constructions.

2.1 Simple sentence constructions

In simple sentences the existential verb 'be', essentially occurs just after the subject. The present tense copula *a* does not show agreement with the subject whereas the past tense copulas *t-ɔ* and *t-i* agree with the subject of the sentence in number and gender.

(5) *sɔ a ebi bi ḍaḍɔ*
s/he be-PRE still also strong
'S/he is still strong.'

(6) *sɔ a kɛda di*
s/he is jail in
'S/he is in jail.'

(7) *jɔ gʰɔr a bəḍɔ bãkɔ*
this house be-PRE very beautiful
'This house is very beautiful.'

(8) *jɔ cʰoʰṭu t-ɔ nagɔ*
that boy be-PST-M naked
'That boy was naked.'

(9) *jɔ cʰoʰṭi t-i bəḍi napʰikəri*
that girl be-PST-F very careless
'That girl was very careless.'

In these sentences, verb 'be' can optionally occur in the sentence final position but in that case the sentence is either interpreted as interrogative or has some focus. This shows that the prominent order of constituents in a sentence is SVO rather than SOV. Below we look at some of the constructions with transitive/ditransitive verbs.

2.2 Sentences with transitive/ditransitive verb

In a sentence with transitive verb the object follows the main verb, i.e., the object occurs in sentence final position, as in (10a). The exchange of order between the verb and the object, as in (10b) makes the sentence either interrogative or exclamatory depending on the context. Hence (10b) is grammatical but not a statement.

(10) a. *ama kaṭa macʰi*
mother cuts fish
b. *ama macʰi kaṭa*
mother fish cuts
'The mother cuts the fish.'

In a sentence with auxiliary elements, the main verb may either precede or follow the object but the auxiliary essentially precedes the object, as in (11):

(11) a. *ram a lagɔnɔ jʰuḷkʰɛ dʰondɔ*
Ram be-PRE PROG clothes wash

b.	*ram*	*a*	*lag⊃n⊃*	*d*^{h}*ond⊃*	*j*^{h}*uḷk*^{h}*ɛ*
	Ram	be-PRE	PROG	wash	clothes

‘Ram is washing the clothes.’

In a sentence with a ditransitive verb, the direct object precedes the indirect object, i.e., the direct object immediately follows the verb, as in (12). However, the indirect object can alternatively precede the direct object, as in (13). In the latter case the sentence has word order similar to that of English.

(12)	*mɛ*	*din⊃*	*pɛn*	*tu*	*lɛ*
	I-ERG	gave	pen	you	to
(13)	*mɛ*	*din⊃*	*tu*	*lɛ*	*pɛn*
	I-ERG	gave	you	to	pen

‘I gave pen to you.’

2.3 The structure of the verb phrase

As has already been noted above the verbal constructions of Outer Siraji has quite a different internal structure in comparison to other Indo-Aryan languages. I argue that this is because Outer Siraji is an SVO language. In simple verbal constructions, the auxiliary verbs, which denote tense, precede the main verb, as is the case in English, an SVO language. The modal verbs, which indicate functions such as progressive, capabilative and obligative, etc. precede the main verb, i.e., they occur in the second position in a sentence. This fact again differentiates Outer Siraji from other Indic languages and brings it closer to Kashmiri. Like Kashmiri, in Outer Siraji an adverb or a noun can occur between the auxiliary/modal verb and the main verb. All these facts indicate that the position of the finite verb is obligatorily fixed before the object of the sentence. We can notice that the main verbs in these constructions are non-finite in the sense that they do not carry tense (tense is essentially marked by the copula).

(14)	*s⊃*	*a*	*lag⊃n-⊃*	*p⊃ḷd-⊃*	*kətab*
	he	be-PRE	PROG-M	read-M	book

‘He is reading the book.’

(15)	*mũ*	*t-⊃*	*lag⊃n-⊃*	*caḷd-⊃*
	I	be-PST-M	PROG-M	go-M

‘I (m) was going.’

In (16-17), a noun/pronoun intervenes the verbal structure. Again the main verbs in these constructions are non-finite verbs.

(16)	*sɛ*	*a*	*lagɛnɛ*	*kam*	*k⊃r-dɛ*
	they	be-PRE	prog	work	do-PART

‘They are working.’

(17) *hame* *a* *j^hūṭ^h* *bol-ṇɔ*
we be-PRE lie tell-INF
'We have to tell lies.'

The modal verbs such as obligative marker (OBG) *go-*, desiderative marker *cei,* completive (COPL) aspect marker *her-* and capabilative marker *sɔk-* precede the main verb. However, the main verb (infinitive/gerund) can be intervened optionally by noun or adverb as the case may be.

(18) a. *mũ* *go-a* *k^haṇi* *roṭi*
I OBG-PRE eat bread
b. *mũ* *go-a* *roṭi* *k^haṇi*
I OBG-PRE bread eat
'I am compelled to eat bread.'

(19) a. *mũ* *go-a* *kɔrṇɛ* *k^hasɛ* *kam*
I OBG-PRE do many work
'I am compelled to do a lot of work.'

b. *mũ* *go-ɛ* *k^hasɛ* *Kam* *kɔrṇɛ*
I OBG-PST many work do
'I was compelled to do a lot of work.'

(20) a. *sɔ* *a* *her-ɔ* *kɔri* *kam*
he be-PRE COPL-M do work
b. *sɔ* *a* *her-ɔ* *kam* *kɔri*
he be-PRE COPL-M work do
'He has finished the work.'

(21) *hame* *cei* *bisṃɔ*
we should forget
'We should forget.'

(22) a. *teu* *cei* *piṇi* *ca*
you should drink tea
b. *teu* *cei* *ca* *piṇi*
you should tea drink
'You should take tea.'

(23) *mũ* *cei* *kɔrṇɛ* *k^hasɛ* *kam*
I should do a lot work
'I should do a lot of work.'

(24) *sita* *hi* *sɔka* *gai*
Sita only can sing
'Only Sita can sing.'

(25) *sɔ* *sɔka* *kɔri* *k^{h}asε* *kam*
he can do lots of work
'He can do a lot of work.'

2.3.1 *Position of adverbials*

In Outer Siraji, the order of adverbial elements in a sentence is quite flexible.

(26) *sε* *a* *lagεn-ε* *k^{h}eča* *di* *kam* *kɔr-dε*
they be-PRE PROG-PL field in work do-PART
'They are working in the field.'

(27) *$c^{h}o^{h}$ṭu* *lagɔn-ɔ* *k^{h}eld-ɔ* *g^{h}ɔra* *pac^{h}ε*
boy PROG-M play-M house behind
'The boy is playing behind the house.'

Adverbs can also optionally occur before the finite verb, i.e., just after the subject noun phrase, as in (28):

(28) *mε* *hiz* *l-ε* *sat* *pεn*
I-ERG yesterday buy-PST seven pen
'Yesterday I bought seven pens.'

When two adverbs, i.e., adverb of time and adverb of location occur in a sentence, the adverb of time precedes the adverb of location in Outer Siraji whereas in Hindi (as in(33)) and other Indo-Aryan languages, adverb of location preferably precedes the adverb of time before the verb.

(29) *mε* *hiz* *l-ε* *sat* *pεn*
I yesterday buy-PST seven pen
'Yesterday I bought seven pens.'

(30) *sɔ* *aɔ* *eki* *beri* *idi*
he came one time here
'He came here once.'

(31) *mero* *b^{h}ai* *t-ɔ* *pačhi* *bɔrše* *šiml-e* *lagɔn-ɔ* *Pɔḷd-ɔ*
my brother be-PST-M last year Shimla-in PROG-M study-M
'My brother was studying in Shimla last year.'

(32) *sɔ* *roz* *na-ɔ* *tidi*
he daily go-PRE-M there
'He goes there daily.'

(33) *wo* *yahā* *ek* *bar* *aya* (Hindi)
he here one time came
'He came here once.'

We notice that the internal structure of a verb phrase and the position of its constituents in a sentence in Outer Siraji differ from other Indo-Aryan languages in significant ways. The auxiliary and modal verbs not only precede the main verb (more or less like English) but essentially precede the object. According to Greenberg's implicational universals as well as Vennemann's generalizations, auxiliary, modal and intentional verbs precede the main verb in SVO languages as opposed to the case in SOV languages.

2.4 Word order in subordinate clauses

In fact, Outer Siraji exhibits the properties of mixed word order norm like Kashmiri and German. The subordinate clauses have SOV order rather than SVO. For instance, in relative clause and conjunctive participial constructions the verb occurs after the object. However, in the main clause SVO order is maintained, as in (34-35). Vennemann accounts this phenomenon (in German) by observing that German is a new SVO language.

(34)	*juṇbi*	*log*	*teulɛ*	*bola*	*sɔ*	*kɔr-a*	*teta*	*gɛ*	*kin*
	whatever	people	him	tell	he	do-PRE-M	that	on	belief

'He believes whatever people tell him.'

(35)	*roṭi*	*kʰa-ya*	*tei*	*pi-ɔ*	*paṇi*
	bread	eat-CP	he-ERG	drink-PST-M	water

'After having eaten bread he drank water.'

We notice that the basic word order in simple sentences in Outer Siraji is SVO like English whereas in complex sentences the subordinate clauses follow SOV order. Besides these observations, we also notice that Outer Siraji allows certain alternative word orders too. A large number of sentences with typical SVO order optionally allow SOV order like Hindi. Sentences in (36) are listed in order of the degree of their acceptability. The structure not accepted at all is not listed here.

(36)					
a.	*merɛ*	*herɔ*	*ek*	*adəmi*	*tidi*
	I-ERG	saw	one	man	there
b.	*merɛ*	*herɔ*	*tidi*	*ek*	*adəmi*
	I-ERG	saw	there	one	man
c.	*tidi*	*herɔ*	*merɛ*	*ek*	*adəmi*
	here	saw	I-ERG	one	man
d.	*merɛ*	*ek*	*adəmi*	*tidi*	*herɔ*
	I-ERG	one	man	there	saw

'I saw a man there.'

According to the native speakers' intuition, the structure in (d) is acceptable but is not normally used. This perhaps shows the influence of

Hindi on this language. The first three sentences listed above show some degree of semantic differences in terms of focus and emphasis. The set of three alternative orderings also indicates that the verb can possibly be moved to the pre-subject position in a sentence, as in (36c). This shows that VSO order is more acceptable than SOV order, as listed in (36d). Hook (1976) has also noted that in Kashmiri, a sentence in which the finite verb precedes the subject is not at all rare. However, it should be noted that the basic order remains to be SVO in Outer Siraji. Below we look at some more examples with VSO order.

(37) a. *tu* *na⊃*
you went
b. *na⊃* *tu*
went you
'You went.'

(38) *az* *doti* *na⊃* *s⊃* *apṇɛ* *skula* *lɛ*
today morning go-PST-M he self school to
'Today morning he went to his school.'

2.5 Word order within the noun phrase

The major constituents that occur in a noun phrase are attributive adjectives, genitive nouns, demonstratives, numerals and quantifiers. In Outer Siraji, like Hindi and English, the head noun occurs in the final position of the noun phrase. The modifier elements precede the head noun and follow a definite order of occurrence before the head noun. Below we look at some of the illustrative examples.

i. Adjective-noun

(39) a. *acc*^{h}*⊃* *adəmi*
good man
'a nice man.'
b. *bãki* *c*^{h}*o*^{h}*ṭu*
beautiful girl
'a beautiful girl.'

ii. Demonstrative-noun

(40) a. *s⊃* *c*^{h}*o*^{h}*ṭu*
that boy
'that boy'

b. *sɛ* *c*^{h}*o*^{h}*ṭi*
those girl
'those girls'

iii. Numeral-noun

(41) *čɔn cʰoʰṭi*
three girl
'three girls'

iv. Demonstrative-quantifier-numeral-adjective-noun

(42) *sɛ sɔbi čɔn bāki cʰoʰṭi*
those all three beautiful girls
'all the three beautiful girls'

v. Genitive-demonstrative-quantifier-numeral-adjective-noun

(43) *meri sɛ sɔbi čɔn bāki cʰoʰṭi*
my those all three beautiful girl
'my all those three beautiful girls'

vi. Genitive- demonstrative-quantifier-numeral-intensifier- adjective-noun

(44) *meri sɛ sɔbi čɔn bɔḍi bāki cʰoʰṭi*
my those all three very beautiful girls
'my all those three very beautiful girls'

The constructions listed in (39-44) show the basic order of occurrence of various nominal modifiers within a noun phrase in Outer Siraji. The example in (44) gives the relative order of all the different nominal modifiers that occur in the noun phrase. We notice that the order of different nominal modifiers in noun phrase in Outer Siraji is like those of English and Hindi. It slightly differs from English in that the quantifier in Outer Siraji follows the demonstrative whereas in English it precedes the demonstrative.

3. Theoretical implications

Lehmann observes that when a language undergoes a change in the position of verb in a sentence it affects a change of order in other constituents in course of time. The question that immediately comes to mind is why a language changes the position of its verb and why it affects the position of the other constituents in noun phrase, verb phrase, etc. Vennemann argues that the basic word order in a natural language is SOV. He further argues that phonological changes weaken the inflectional marking such as case and agreement inflections of subject and object nouns. This necessitates the verb to occur in the position between subject and object nouns to enable their identification as subject and object respectively and not the vice versa. According to. his generalizations, the verb shift occurs first for nominal objects rather than for pronominal objects because the loss in case marking occurs first in main clauses and subsequently in subordinate clauses. Bartsch (1973) observes that with change in the position of the verb in a sentence the position of the other elements also change as per the principle of natural serialization. Following this principle Vennemann (1973: 41) gives the following order of operator and operand with respect to the position of verb:

[Operator][Operand] in OV languages
[Operand][Operator] in VO languages

The operator-operand relation is similar to modifier-head relation in a phrase. Syntactically adverbs are operators on verb because the result of the operation is a complex verb rather than a complex adverbial. Hence the application of an operator to an operand results in a constituent of the same category as that of the operand. The main verbs that are infinitive (non-finite, etc.) are operators on auxiliaries and finite modals because they result in the finite verb. In Outer Siraji, auxiliary and modal verbs precede the main verbs i.e., the operands precede the operators, a characteristic of VO languages (according to Vennemann).

Then, the next question that arises is why the relative position of object and verb sets the pattern for all the other operator- operand relationships in a language as formulated by Vennemann (1973) and Bartsch (1973). To Vennemann object-verb relationship itself is an operator-operand relation, with the object as operator and the verb as operand. According to Vennemann object-verb relation (not the subject-verb relationship) is the first operator-operand relationship and children acquire language on this analogy. The adjustment of other word order relationship to the relative order of object and verb is, therefore, recognized as analogical change.

Bartsch's (1973) principle of natural serialization also explains several of Greenberg's generalizations. Let us consider Greenberg's universal 20 which states - "when any or all the items- demonstrative, numeral and descriptive adjective precede the noun, they are always found in that order. If they follow, the order is the same or its exact opposite". According to Vennemann, we can predict the word order of any language on the basis of the order of object and verb in the main clause in that language. Languages with VSO order are always prepositional as opposed to SOV that are postpositional. The characteristics of SVO are closer to that of VSO than SOV. According to the typological studies so far carried out, SVO exhibits very much a mixed type of word order. This makes it difficult to predict much with respect to SVO languages. For instance, some SVO languages are prepositional whereas the others are postpositional. The word order facts in main and subordinate clauses are further examples of mixed/split norms in SVO language. German is often quoted as a classical example in this regard. According to Vennemann (1973: 46), "German has a very bad syntactic system due to its incomplete shift from SOV and SVO'. The finite verb has been shifted in main clauses but not in the dependent clauses. Vennemann has also noted that English is a young SVO language developed from SOV and English may develop the structure of noun phrase of the type [[[[[N] A] Plu] Num] D]. The structure of the English noun phrase is similar to that of SOV languages. This is true of Kashmiri and Outer Siraji. In Greenberg's (1966b: 32) universals out of the total 13 SVO languages, 5 have adjective-noun order, 7 have determiner-noun order, 4 have genitive-noun order and 8 have numeral-noun order. We notice that a large number of languages, irrespective of their basic word order, follow adjective-noun order in the noun phrase. Therefore, the claim that SVO languages will necessarily shift to noun-adjective order in the noun phrase in course of time is not convincing at all. According to Vennemann the inconsistency in languages with respect to word order facts is because they are changing from one type to another. The initial observations with respect to the word order facts of Outer Siraji indicate some anomaly in the generalizations made so far in the literature on linguistic typology. According to the conclusions reached in Vennemann's study, a natural language follows a specific path to effect change in word order norm. In his view, free word order (FWO) gives way to SOV that in turn becomes SVO before finally reaching to the stage of VSO order. In the case of Outer Siraji, there is no denying the fact that it is basically a SVO language. If we follow Vennemann's point of view, we will have to accept that Outer Siraji basically was an SOV language and it is on its way to become SVO. This position appears to be quite weak given the fact that Outer Siraji is surrounded by SOV languages that do not show any trace of changing into SVO word order. Therefore, the question is why only Outer Siraji shows such traits. The more convincing position is that Outer Siraji along with some other Western Pahari languages has basically been an SVO language. At the present stage it shows signs of effecting a change from SVO to SOV order. I argue that language change follows a random direction of shift from one word order to another. On the basis of the evidence from Outer Siraji, it is proposed that a free word order language can directly shift to SVO order and there are no hard and fast constraints to determine the direction of order shift from one order to another. The following schema shows the possible directions in which the change may occur. The diagram as in (a) below shows that a natural language may shift from FWO to SVO directly, skipping the SOV order and this is what is evident from the case of Outer Siraji. (b) shows Vennemann's (1973: 40) schema of order shift.

a.

$$\begin{tikzcd}
\text{VSO} \arrow[r] \arrow[d, shift right] & \text{FWO} \arrow[d] \arrow[dl] \\
\text{SVO} \arrow[u, shift right] \arrow[r, shift left] & \text{SOV} \arrow[l, shift left]
\end{tikzcd}$$

b.

$$\begin{tikzcd}
\text{VSO} \arrow[r] \arrow[d, shift right] & \text{FWO} \arrow[d] \\
\text{SVO} \arrow[u, shift right] & \text{SOV} \arrow[l]
\end{tikzcd}$$

4. Conclusion

Outer Siraji is an SVO language surrounded by predominantly SOV languages. In the context of Outer Siraji the claim that SOV changes to SVO needs be modified with an argument that SVO can also shift to SOV. The predominant SOV order of neighbouring languages may possibly effect a change in the basic word order pattern found in Outer Siraji. Besides there is strong possibility that languages move not only from SOV to SVO but also vice versa. This further presents a possibility that word order shift is a cyclic phenomenon rather than unidirectional. If this is true then the present word order facts found in Outer Siraji should reflect a transition stage. That is, the SVO order of Outer Siraji should be explained by claiming that its basic word order is SVO whereas its mixed characteristics (the subordinate clauses follow SOV order and the nominal modifiers precede the head noun in noun phrase, besides the possible alternative ordering) can be accounted for by noting that the language is passing through a transition stage from predominantly SVO norm to SOV norm. At present, we are not in a position to examine the language diachronically (because there is no written records of any sort available in this language). This paper has shown that Outer Siraji is basically a SVO language with typical mixed characteristics associated with other SVO languages (particularly Kashmiri). The contact with the dominant neighboring SOV languages, of course, has a major effect on it. Therefore, without completely ruling out the effects of neighboring languages I argue that Outer Siraji may be shifting from SVO to SOV norm basically due to language internal factors.

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RESTRUCTURING GRAMMARS IN CONTACT SITUATIONS: A CASE OF CAUSATIVE CONSTRUCTIONS IN ENDANGERED LANGUAGES

ANVITA ABBI
Jawaharlal Nehru University

Abstract

The Indian subcontinent represents one of the classic cases of language diversity interlaced with widespread multilingualism and contact among languages of distinct language families. Intense and stable contact among various Indian languages has given rise to several areal features and has resulted in restructuring the grammars of these languages. The paper discusses causative formation in particular in languages of Jharkhand and regions touching the eastern border of the state. Domination of Hindi and its dialects has forced the tribal languages of the region for a change in the grammar. New pragmatic slots are opened by the intensity of contact and then filled in by the combinatory possibilities of the native and non-native rules of grammars. Causative morphology in general in these languages represents a high degree of readjustment in existing grammars. Such a change in turn has resulted in complexities and not simplicities in the grammars, as well as redundancies that were absent in the languages prior to contact. Language contact has been shown to bring about change in grammars by constantly providing stimulus to add, drop and internally innovate linguistic structures. Data has been drawn from Kurux (Dravidian), Kharia and Santhali (Munda).

1. Background

Jharkhand and *Eastern India* represent tribal languages such as Kharia, Santhali and Korku (Munda branch, Austro-Asiatic); Kurux, Malto (North Dravidian). The two areas represent contact between three distinct language families, the Indo-Aryan, the Dravidian, and the Munda (Abbi 1997). Bilingualism rate among all the speakers of these languages is very high. Except Santhali speakers, other language speakers often discourage their children from using the native language and favour the adoption of the dominant language of the region, i.e. Hindi (Abbi 2001).

1.1. Causative Formation

The Indian area is characterized by morphological causatives (Masica 1976). Languages of the Indo-Aryan stock are rich in providing two morphologically distinct degrees of causatives, direct and indirect, by suffixation to the root form. This, tendency, however is not an areal feature. Some of the eastern Indo-Aryan languages show only "one layer" of causatives (Masica 1976: 68). Languages of the Munda branch offer only one layer of causative formation indicating both direct and indirect forms through affixation (prefixes and infixes in Central Munda and suffixes in North Munda). Languages of the Dravidian family offer three[1] and four way patterns[2], however, if spoken in the region dominated by the Indo-Aryan languages, they show an interesting pattern of the two-degree causatives represented morphologically. In order to understand the nature of the change in the contact languages in the area of causative formation, we shall first review the Indo-Aryan type of causative formation, as languages in contact with this family show signs of converging towards Indo-Aryan.

2.1. The Indo-Aryan

The causative formation in Indo-Aryan languages is always by a suffix morphology as two different morphemes *-a* and *-wa*: can be added to the verb root to increase its valency power. The former derives the popularly known 'Direct Causative' [also called the 'First degree causative'] and the second one *-wa*: derives the 'Indirect Causative' [also called the 'Second degree causative']. See Table 1. The first column represents the non-causal base form, the second column is a derivative of the base form, which could either be transitive form or causative depending upon the basic form undergoing derivational process. The third column is a derivative of the forms in the second column.

Table 1

Causative Morphology of Hindi

Verb Types	**Basic verb**	**Direct causative**	**Indirect causative**
Di-Transitive	*kha* 'eat'	*khil-a*:- 'feed'	*khil-wa-*:- 'make someone feed X'
	likh- 'write'	likh-a:- 'make someone write'/ 'dictate'	*likh-wa*:- 'make someone write through someone, dictate through someone'
Intransitive	*ro-* 'to cry'	*rul-a*:- 'make someone cry'	*rul-wa*:- 'make someone cry through someone'
	so- 'to sleep'	*sul-a*:- 'put someone to sleep'	*sul-wa*:- 'put someone to sleep through someone'
Transitive	*dekh-* 'to see'	*dikh-a*:- 'show'	*dikh-wa*:- 'make someone show X'

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1. Krishnamurti (1971) sets up three verb-stem types, intransitive, transitive, and causative that are related morphologically and syntactically.

2. "Dravidian system contains simplex, mediative of simplex, causative, and mediative of causative" (Emeneau 1971:39).

2.2. Munda

It is well known that Munda languages derived causative by prefixes or infixes added to the verb root (Pinnow 1966). The formation of causative was always a one step formation, i.e. causative morpheme added to an intransitive verb increased the valency of the verb by one argument and the same causative morpheme added to a transitive verb also increased the valency by one more argument. In both cases, the phonological shape of the causative morpheme remained constant.

Our fieldwork during the last past twenty years in the region of Jharkhand shows that Kharia has substantially and Santhali has marginally incorporated the system of double causative formation in their languages. Each Munda language, however, has adopted the Indo-Aryan system differently. We shall first consider Santhali examples.

2.2.1. Santhali

The one and only causative morpheme in the language is *-o?co*. Santhali never distinguished overtly between Direct and Indirect causative. Another interesting fact is that Santhali does not use the causative morpheme if the causee [patient] is non animate. The following two sentences will explicate.

1. *(iñ) uni ṭhen kh⊃n-iñ ñu:r- o?co- ked e-a*
   I 3sg by ABL-SUBJ fall-CAUS- pst OBJ-DEF
   'I made him fall'
2. *(iñ) bohiñ ñu:r-ked e-a*
   I book-SUBJ fall-pst OBJ-DEF
   'I made the book fall'

When the language uses the causative morpheme, it uses the one form *-o? co* to derive transitive from intransitive and causative from transitive. See table 2.

Table 2

Causative Morphology of Santhali

BASIC VERB	CAUSATIVE FORMS[3]
horo?- 'wear'	*horo?-o?co*
∂ul- 'write'	*∂ul-o?co*
duruk- 'sit'	*duruk-o?co*
taṛ∂m- 'walk'	*taṛ∂m-o?co*
b∂ṛαy- 'know'	*b∂rαy-o?co*

---

[3] The language seems to indicate indirect causation only, as the root is not clearly 'transitive' or 'intransitive' or verbal. (Masica 1976:70).

When the language borrowed verbs from the Indo-Aryan languages it restructured its grammar in such a way that two distinct causative forms were innovated on the pattern of the dominant language. Consider Table 3. All the verbs given in Table 3 are loans from the Indo-Aryan language Hindi or one of its regional variations. The borrowing from the Indo-Aryan languages introduced two distinct forms of direct and indirect causatives in the language, the first one with an Indo-Aryan suffix *-ay* and the second one with a joining of the Indo-Aryan suffix to the indigenous *-o?co* suffix.

Table 3

Causative Morphology of santhali in Borrowed verbs

Gloss	Direct Causative	Indirect Causative
wash	*səph-ay*	*səph-a-o?co*
make	*bən-ay*	*bən-a-o?co*
stitch	*sil-ay*	*sil-a-o?co*

Santhali is one of those tribal languages that has seen a revival by various socio-political efforts and at present endeavours to restrain itself from borrowing from the neighbouring languages. Despite this, a large number of verbs are borrowed in the language, perhaps unconsciously, but resistance to grammatical morphemes is noticed. For instance, the suffix -ay is never affixed to the indigenous verbal lexicon. The case of Kharia is, however, different.

2.2.2. Kharia

Kharia forms its causative by the prefix *ob-* ~ *o-* and by the infix *-b-*, each phonologically conditioned (zide 1984). The *ob-/o-* is prefixed to the monosyllabic stems, whether borrowed or not. The infix *-b-* is attached to the disyllabic stems[4]. Consider Table 4. The infinitive suffix *-na* is an Indo-Aryan borrowing. The occurrence of infix and prefixes are shown in bold. The language, as mentioned earlier, did not make morphological distinction between direct and indirect causative forms. The situation exemplified below refers to the morphological component of the language before the contact induced changes were incorporated.

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[4] There is an observation made by Malhotra (1982) that the prefixes are used to derive causatives from the transitive verbs while the infix is used for deriving transitive verbs from intransitive verbs. However, there are exceptions found to this statement, e.g. pud-na 'to jump' and yar-na 'to flee' are derived as ob-pud-na and ob-yar-na respectively as causative forms.

Table 4

Causative Morphology of Kharia

The Basic Verb Type	Causative Forms
osel 'white'	*o*-**b**-*sel* 'to whiten'
bhore 'full'	*bho*-**b**-*re* 'to fill'
puḍ-na 'to jump'	**ob**-*puḍ-na* 'make someone jump'
ḍiyar-na 'to enter'	*ḍi*-**b**-*?ar-na* 'make someone enter'
ño?-na 'to eat'	**ob**-*ño?-na* 'feed'
uḍ-na 'to drink'	**ob**-*uḍ-na* 'make someone drink'
oṛeb-na 'to get cold'	*o*-**b**-*ṛeb-na* 'to cool'
ṭoṅ-na 'to drive'	**ob**-*ṭoṅ-na* 'make someone drive'
ḍeb-na 'to climb'	o-*ḍeb-na* 'make someone climb'

When Kharia came into contact with Hindi and its dialects with two distinct causative formation suffixes, it changed its grammar in such a way that it incorporated direct and indirect causatives in the following fashion. Consult Table 5.

(a) Direct causative forms are formed uniformly by infixation of *-b-* to the disyllabic words. Monosyllabic words, however take *o-* prefix [see Table 6]. This means no change was made as far as the direct causative forms were concerned.

(b) However, once these forms are derived so, further addition to the verb stems is made by adding the prefix *ob-/o-* to derive the indirect causative. Both the forms of direct and indirect causatives thus are derived from the indigenous material. Only the paradigm [the system] is borrowed from the Indo-Aryan. It is now claimed beyond doubt that depending upon the length and the intensity of the contact and the nature of the bilingualism of the populations, languages can borrow phonological and morphological rules (Thomason and Kaufman 1988:21, Campbell 1996:102) without lexical transfer.

Table 5

Kharia Causative Morphology In Contact Situation

BASIC VERB TYPE	DIRECT CAUSATIVE	INDIRECT CAUSATIVE
lusu-na 'to snatch'	*lu-b-su-na*	*ob-lu-b-su-na*
laḍa-na 'to laugh'	*la-b-ḍa-na*	*ob-la-b-ḍa-na*
joṛe-na 'to fix'	*jo-b-ṛe-na*	*ob-jo-b-ṛe-na*
ului-na 'to boil' V_{intr}	*u-b-lui-na*	*ob-u-b-lui-na*
ḍoko-na 'to sit'	*ḍo-b-ko-na*	*ob-ḍo-b-ko-na*

It is interesting to note that language has violated its previous rule application of affixing the -ob prefix, as it no longer attaches to only monosyllabic words. In fact, a new and innovative strategy has been created to form indirect causatives, i.e. mix all the available strategies available to the language. This will be termed as maximal use of grammatical strategies.

In our recent fieldwork on urban Kharia speakers (Saloni 2000), we found that the language is in the process of evolving a strategy to derive indirect and direct causative forms of monosyllabic verb forms by readjustment of the existing rules. The readjustment involves extension of the Prefix Application Rule as the occurrence of o- is no longer restricted to words beginning with b-, i.e. phonological conditioning. The prefix o- is now used to create direct causative formation and thus is attached to all types of verbs. Consider Table 6.

Table 6

Kharia Causative Morphology in Monosyllabic words In Contact Situation

THE BASIC VERB TYPE	DIRECT CAUSATIVE	INDIRECT CAUSATIVE
*ḍ*eb-na 'to climb'	*o-ḍeb-na* 'to lift'	*ob-ḍeb-na* 'have someone else lift'
geb-na 'burn' Vintr	*o-geb-na* 'to burn X'	*ob-geb-na* 'make someone burn X'
leṅ-na 'fly' V_{intr}	*o-leṅ-na* 'make X fly'	*ob-leṅ-na* 'make someone fly X'

Contact induced changes, however are not restricted to maximal use of the grammatical strategies, but also to expansion of the strategies in a way that it creates redundancies in the borrowing grammar. Kharia has been found of adopting such expansion strategies with those verbs that are directly borrowed from Indo-Aryan. In the examples given below, the verb forms along with the direct causative forms are borrowed directly from Hindi with slight phonological adaptation. The indirect causative forms [column 3] are formed by borrowing the Hindi verb with indirect causative forms but with an additional causative prefix from its indigenous stock. The resultant effect is redundancy in the structure and expansion of the existing rules as there are two indirect causative forms used in column 3. As informants refuse to use the indirect causative forms without prefixing *-ob*, perhaps it can be said that the unit borrowed is the whole word with the causative morpheme *-wa*, any addition to the form from the indigenous stock makes the construction grammatical in Kharia. Consider Table 7. Sometimes the borrowed word is already in the direct causative form in the contact language [the last two examples shown in bold in the first column of the following table]. In such a case the borrowing language does not treat the borrowed verb as an already derived form, but as the basic form. It then adds causative suffixes exactly on the paradigm of other borrowed verbs.

Table 7

Kharia Causative Morphology in Borrowed Verbs

Basic Verb Type	Direct Causative	Indirect Causative
likhe-na 'to write'	*likh-ay-na* 'make someone write'	*ob-likh-way-na*
sudhər-na 'improve'	*sudhr-ay-na* 'to improve'	*ob-sudhər-way-na*
kər-na 'to do'	*kər-ay-na* 'make someone do"	*ob-kər-way-na*
khule-na 'open'	*khul-ay-na* 'make someone open'	*ob-khul-way-na*
*ləd-***ay***-na*[5] *'load'*	*ləd-way-na* 'make someone load'	*ob-ləd-way-na*
mən-**ay**-*na* 'cajole'	*mən-way-na* 'make someone cajole'	*ob-mən-way-na*

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5. The verb 'to load' in Hindi has three forms, i.e. ləd V_{intr}, la:d $V_{tr/direct\ caus}$, and ləd-wa $V_{indirect\ caus}$. The form ləda: does not exist in Standard Hindi. However, the colloquial variety uses ləda: and lədwa interchangeably. Kharia seems to have borrowed the colloquial variety ləda: as the basic verb.

The last two examples are interesting. If the borrowed transitive verb already contains the *-ay* suffix then the language uses *-way* for the first causative and *ob-* plus *-way* for the second causative. Barring the last two examples, the other examples in the third column show redundancies as the grammar has two causative markers, an indirect causative marker from the Indo-Aryan as well as the *ob-* prefix from its indigenous stock. *These examples were not found in the fieldwork conducted in the late seventies and the early eighties.* However, the recent fieldwork in the area attested many examples of the kind given in Tables 6 and 7 in the speech of young generation multilingual Kharia speakers.

Kharia is clearly seen to be on its way to restructuring its grammar, as the rules for causative formation no longer depend upon the phonological conditioning but on the basis of the valency of the verb. Redundancies and expansion are only in the area of transitive verbs. Combined with the pre-existing rules of causative formation, the Kharia grammar has become more complex than the one prior to language contact. The language seems to be in the process of changing fast.

The structural-compatibility claim advocated by Jakobson (1938:54), Aitchison (1981:121), and Weinreich (1953:25) cannot be maintained as Munda rules of forming causatives defy the claim[6]. Typologically distinct and genetically diverse languages of the Munda family borrow structures from Indo-Aryan without hesitation. New pragmatic slots are opened by the intensity of contact and then filled in by the combinatory possibilities of the native and non-native rules of grammars.

3. Dravidian

Kurux, the North Dravidian language spoken in close proximity to Munda languages such as Kharia and Santhali as well as Indo-Aryan languages such as Hindi and Sadari, has also been influenced by Indo-Aryan in causative formation though with lesser intensity than the Munda languages. Interestingly, the other North Dravidian languages such a Malto and Brahui have retained indigenous suffixal morphology for deriving first and second degree of causatives despite being surrounded by the Indo-Aryan languages. Ekka (1972) mentions two different kinds of derivational suffixes of causation for Kurux (see Table 8), but he links them to the +/- volitionality of the real agent to do the action. Present Kurux, tends to move towards homogenization of morphological causative formation of the region. Restructuring of grammar has already set in, as one can find a large number of borrowed verbs with Indo-Aryan causative suffixes. Second causatives are formed exactly on the pattern adopted by Munda languages, i.e. drawing causative morphemes from two different sources. Consider the following sentences.

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[6] "The very idea of restructuring and concomitant system-altering changes goes against the oft-quoted 'structural compatibility requirement'." (Aikhenvald: 2001: f.n.2)

Kurux

3. *en* *Hindi* *sikh* *lagi*
I Hindi learn feel
'I am learning Hindi'

4. *en* *adi-n* *kuṛux* *sikha-wa* *lag-en*
I 3msg-ACC Kurux learn-CAUS feel-1msg
'I am teaching [making him learn] Kurux'

5. *en* *adi* *-n* *masṭar-asti* *kuṛux* *sikha-wa* *t?a* *lag-en*
I 3msg- ACC master- by Kurux learn-CAUS CAUS feel-1msg
'I am making him learn Kurux by the master'
'I am teaching [making him learn] Kurux'

The causative verb *sikha-wa* in Hindi [the donor language] is used as an indirect causative form. However, Kurux uses it as a direct causative form (4) keeping in reserve the indirect form which it creates by adding indigenous causative morpheme *-t?a* to this form [i.e. the Kurux direct causative form (5). Such double causative morphemes are seen only with borrowed vocabulary. As Kurux has an extensively large borrowing of verbs from the Indo-Aryan languages in the lexical stock, the pattern is quite frequent. The original pattern in Kurux is of driving transitive by the suffix *-?a:* and forming causative by using the suffix *-t?a* attached to the transitive verbs of all types. However, Mishra (1992) draws our attention to the double causative forms in Kurux spoken in some areas of Chotanagpur district by duplicating the initial syllable of *-t?a*, as in *ta-t?a*. The following table lists Kurux verbs in causative forms. Table 8 represents causative forms of transitives in the first three rows, the original pattern of deriving transitives and then causatives in the next three rows and the borrowed pattern in the next two rows. The table given conflicting data, an evidence of fast changing grammar.

Table 8

Causative Morphology of Kurux

The Basic Verb	Direct Causative	Indirect Causative	
k∂m 'build'	*k∂m–t?a:*		*VERB*
ojj 'stitch'	*ojj-t?a:*		*TRANSITIVE*
cāx 'sow'	*cāx-t?a:*		
maṛx 'dirty'	*maṛx-?a:*	*maṛx--t?a:*	*VERB*[7]
curx 'drop'	*curx-?a:*	*curux-t?a:*	*INTRANSITIVE*
co? 'get up'	*co:-d*	*co:-t?a:*	
b∂c 'escape'	*b∂c-wa*	b∂c-wa-t?a	*BORROWED*
p∂rh 'learn/read'	*p∂rhwa*	*p∂rh-wa-t?a*	*VERBS*

Data in the last three rows is from Ekka (1972:182)

Though the indigenous causative form *-t?a:* is a valency increasing morpheme and has the potentiality of increasing arguments up to three places, the language incorporates the Hindi *-wa* as well.

Causative morphology in general in these languages represents a high degree of readjustment in existing grammars. The contact situation enforces the use of native material as well as borrowed material. The expansion of rules along with the resultant structures renders the grammars of the converging languages very complex.

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[7] Data for verb intransitive is from Ekka (1972:182).

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K. Nagamma Reddy (Ed.), Osmania University, August 2001

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The thesis brings together the great contribution of the Bhakti poets and Theologians of Karnataka, Tamil Nadu, Kerala and Andhra Pradesh. A Scholarly researcher T.N. Ramachandran of Tanjavur concludes thus " I should say the work is a well written one. It is authentic. It is easy to read. The methodology followed is commendable. Even the Indian English of the author has a charm about itself. This work will sooner or later adorn every library worth the name. The sooner the better".

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PRELIMINARIES TO THE STUDY OF IMPERSONAL FINITE SYSTEM IN DRAVIDIAN

R. KOTHANDARAMAN
TCFR, Pondicherry

Abstract

This paper argues that the Dravidian finite system was impersonal in origin, and from which the personal finite system noticed in individual languages has evolved. Malayalam is credited with the sole preserver of the impersonal finite system in the independent clause. Such languages as Tamil, Telugu and Kannada of Dravidian family have retained this system in the syntax of different types. The tense bases occurring before the personal/gender markers, inflectional increments namely **-an-** *and* **-av-**, *and the relative suffix* **-a** *are treated as fossils of impersonal finite system. The two tier personal finite system with long personal markers namely* **-a:n, -a:L, -a:r** *etc., derive from the three tier personal finite system involving the inflectional increment* **-av-**. *E.g.* **ceyt-av + an > ceyt-a:n/-o:n.** *Kannada has a finite system of* **band-o:nu** *'came-he'* (***band-av + anu**), **band-o:Lu** *'came-she'* (***band-av + aLu**) *etc., types derivable from the three tier finite system. However this language is devoid of a two tier personal finite system with long personal markers such as* **-a:nu, -a:Lu, -a:ru** *etc. Quite interestingly a two tier personal finite system with short personal markers such as* **-anu, -aLu** *is noticed to occur in Kannada. E.g.* **band-anu/-aLu** *'came-he/she'. Malayalam despite having a three tier personal finite system with* **-av-** *as inflectional increment has resisted from yielding to the pressure of achieving a two tier personal finite system with long personal markers. It has decisively preferred to retain a single tier impersonal finite system of* **ceytu** *(past),* **ceyyunnu** *(present) and* **ceyyum** *(future) types. The theory that Malayalam finite system was originally of personal type is rejected here outright, since it would be structurally difficult and impossible to derive single tier impersonal finite system from the three tier personal finite system. In the scheme proposed here, constructions of* **ceyt-av** *and* **ceyt-an** *types are treated as two tier impersonal finite system ultimately both of which traceable to* ***ceyt-am** *type.*

1.0 Finite System In Dravidian-Generalia

1.1. The Dravidian Finite System is classifiable into two types namely Personal Finite System (PFS) and Impersonal Finite System (IFS) both being tensed in character. PFS is associated with agreement markers as evidenced in *koyt-a:n̲* 'plucked-he', *koyt-i* 'will pluck-you', *koyk-am* 'will pluck-we', *koyv-o:m* 'will pluck-we'. Of these, *koy-ti* and *koyk-am* belong to early and middle Tamil. IFS lacks agreement with subject NP as noticed in Malayalam. E.g.: *avan̲/avaL/avar/atu/avai ceytu/ceyyunnu/ceyyum* 'he/she/he(hon)/it/they (non-human) did/does or do/will do'. While PFS is attested in independent clause in Tamil as also other Dravidian languages the IFS is confined to dependent clause, otherwise known as non finite subordinate clause. This is the general situation obtained in Dravidian, Malayalam being an exception.

1.2. It has been the general tendency among the comparative Dravidian linguists to maintain that the Dravidian Finite System is essentially of PFS type, and the Malayalam situation with IFS is a later development. They argue that old/early Malayalam had PFS like other Dravidian languages and in due course it has lost the agreement markers resulting in a finite system which we notice now in New Malayalam. None of the proponents of this theory has adduced any convincing phonological, morphological or syntactic argument in support of his/her claim. Loss of agreement markers in a linguistic system is not only a major event but also a significant development, the circumstances under which such loss the system has suffered has to be convincingly made clear. In the absence of any clinching evidence to this effect, we consider that the contention Malayalam had PFS in the early stages and lost the same later resulting in IFS need not be taken seriously.

1.3. It is true that the Dravidian Finite System has sufficient material to reconstruct a PFS to PDr stage. However this does not imply that the PDr was unaware of IFS in its linguistic system. As a matter of fact many of the Dravidian languages do not maintain a syntactic system with hundred percent foolproof Subject-Predicate agreement. This is particularly noticed in the syntax of third person. Notice in early Tamil the verbal predicate in non-human syntax decides whether the subject NP is singular or plural (Tol. Col. *Ce:n̲a:*-171). e.g. *kutirai o:Tiyatu* 'horse ran', *kutirai o:Tin̲a* 'horses ran'. Also to be noted is that theoretically, agreement markers are Pro forms and hence they have to do with the constituents that function as subject. They have therefore nothing to do with the finite system that function as predicate. The finite system is essentially a system marked with verbal base + tense marker. What is generally identified as tense base in Dravidian PFS is theoretically a relic of an earlier finite system of impersonal type and hence we consider that the agreement marker in Dravidian finite system is a superfluous phenomenon possibly representing an earlier syntax of OVS (Object-Verb-Subject) type. Following the copying of S of OVS and moving the same to the front initial position, the SOV syntax seems to have emerged in

Dravidian with V retaining Pro of S representing agreement features with the exception of Malayalam.

2.0. IFS In Tamil - A Ground Reality

2.1. Coming to the main issue, it is to be emphasized that the Dravidian linguistic system is not devoid of IFS in its syntactic fabric despite it has later developed an anomalous PFS. Consider for instance the relative clause alternants in (1) below

1 (a) *vaLLiy-ai [maNant-a] murukan̲*
  (b) *vaLLiy-ai [maNantavan̲ + a:kiya] murukan̲*
    'Murugan who married Valli.'

The verbal construction *maNant(u)* and *maNantav-an̲* figuring in the foregoing relative clause syntax are complementary variants occurring before the suffixal copula *-a* and non suffixal copula *a:kiya* respectively and the subject NP *murukan̲* of which occurring as head noun originates within the relativized clause namely *murukan̲ vaLLiy-ai maNant-a:n̲* 'Murugan married Valli'. Both the verbal constructions under reference function as predicate, the subject of which being *murukan̲*, and notice that the verbal *maNant(u)* of *ceyt(u)* type in 1(a) is the impersonal counterpart of the finite construction *maNanatavan̲* of personal type in 1(b). This testifies that IFS is reality in Tamil syntax. It is not mandatory that a finite system should necessarily occur in independent clause construction to be identified and established of its impersonal character. This ruling holds good to the Dravidian syntax as a whole.

2.2. Consider now the following relative clause alternants where the head noun, as against the one that occurs in relative clause alternants of the type exemplified in (1), does not originate within the relativized sentence identified as complement clause namely, *murukan̲ {vant(u)/vantat(u)/vant-a:n̲} + Copula* 'Murugan came'.

2 (a) *murukan̲ [vant-a] ceyti*
  (b) *murukan̲ [vantat-a:kiya] ceyti*
  (c) *murukan̲ [vanta:n̲ en̲r̲a] ceyti*
    'The news that Murugan came.'

Notice *vant(u)*. *vantat(u)* and *vanta:n̲* in (2) above are in complementary distribution occurring before the copula variants *a, a:kiya* and *en̲r̲a* respectively functioning as complementizers. Since *vanta:n̲* is a finite construction of personal type, the tensed verbals *vantu* and *vantat(u)* being complementary variants of *vanta:n̲* are identifiable as finite constructions of impersonal type. The only difference between personal and impersonal finite constructions figuring in the complement clause constructions in (2) is that while Agreement Transformation operates in the former, such transformation copying the agreement features from subject NP does not apply to the latter.

2.3. Consider now the temporal clause constructions of the following type where *vanta* in (b) has the scope of being traced to **vantav* (**vant-am*). See also footnote 7.

3 (a) *murukan̲ [vanta:n̲. pir̲aku] ra:man̲ po:n̲a:n̲*
'Murugan came. Then Raman went.'
(b) *murukan̲ [vanta pir̲aku] ra:man̲ po:n̲a:n̲*
'Raman went after Murugan came.'
(c) *murukan̲ [vantu, pir̲aku] ra:man̲ po:n̲a:n̲*
'Murugan came and Raman went.'

The personal finite construction *vanta:n̲* and its impersonal counterparts *vanta* and *vantu* in (3) above are in complementary distribution occurring before sentential pause, word pause and bound clausal pause respectively.

2.4. Examine further the fourth type of constructions involving clausal complements functioning as adverb.

4 (a) *amaiccar tan̲ pataviy-ai-t [tur̲anta:r en̲r̲u] ke:LvippaTTe:n̲*
(b) *amaiccar tan̲ pataviy-ai-t [tur̲antat-a:ka-k] ke:LvippaTTe:n̲*
(c) *amaiccar tan̲ pataviy-ai-t [tur̲anta:r̲-po:l] ke:LvippaTTe:n̲*
'I heard that the minister (had) relinquished his post.'

Notice the finite construction *tur̲anta:r* of personal type and the constructions *tur̲antat*(*u*) and *tur̲anta:l* of impersonal type are in complementary distribution occurring before the complementizers *en̲r̲u*, *a:ka* and *po:l* respectively.

2.5. Now consider the fifth situation exemplified below where the suffix *-atu* noticed in cleft predicate in (b) being grammatically insignificant is pleonastic in character.

5 (1) (a) *ko:valan̲ ma:taviy-ai-p [pirinta:n̲]*
'Kovalan parted company with Madhavi'
(b) *ko:valan̲ [pirintatu] ma:taviy-ai*
'It is Madhavi whom Kovalan parted company with'
(2) (a) *murukan̲ e:n̲/eppoLutu/en ke:/eppaT̲i [vanta:n̲]*
'Why/when/where/how did Murugan come'
(b) *murukan̲ [vantatu] e:n̲/eppoLutu/en ke:/eppaT̲i*
'It was why/when/where/how that Murugan came'

Notice the versions in (a) and (b) in (5) are normal and cleft constructions respectively. The finite constructions in (a) are of personal type whereas those finite counterparts in cleft versions are impersonal in character.

2.6. Not always the cleft syntax retains IFS. Consider the following examples where the predicate verbal in (b) is an instance of extended finite construction. See 5.1 for further remarks.

6 (a) *ko:valan̲ ma:taviy-ai-p pirint-a:n̲*
'Kovalan parted company with Madhavi'
(b) *ma:taviy-ai-p pirint-av + an̲ ko:valan̲*
'It was Kovalan who parted company with Madhavi'

The cleft predicate *pirint-av + an̲* in (b) and the normal predicate *pirint-a:n̲* in (a) are both personal in character with formal difference. Since *pirint-av + an̲* is a complementary variant of *pirint-a:n̲,* the former has to be treated as a finite construction of personal type and the same has nothing to do with the so-called participial noun.

2.7. Even with respect to flipped relative clause construction where the head noun is moved leftward to the initial position converting the impersonal relative finite construction into personal finite one as evidenced below, the latter cannot be treated as participial noun.

7 (a) *[ma:taviy-ai-p pirint-a ko:valan̲] maturai-kku-c cen̲r̲a:n̲*
(b) *[ko:valan̲ ma:taviy-ai-p pirint-av-an̲] maturai-kku-c cen̲r̲a:n̲*
'Kovalan who parted company with Madhavi went to Madurai.'

In such relative clause constructions as *puLL-in̲ va:y-k ki:NT-a (kaNNan̲-ai)/(kaNNan̲) puLLin̲ va:y-k ki:NT-a:n̲ai (Tirupaa:vai-13)* 'Kannan who split the mouth of the (demon in the guise of bird)', *ma: va:y-p piLant-a (kaNNan̲-ai)*/(kaNNan) *ma: va:y-p piLant-a:n̲-ai (Tirupaa:vai-8)* 'Kannan who split the mouth of the (demon in the form of) horse', the relative finite system (i.e., *ki:NTa:n̲* and *piLanta:n̲*) of personal type being the complementary variant of finite system of impersonal type (i.e., *ki:NTa* and *piLaNTa*) is noticed to function as predicate in not only early and middle Tamil but in New Tamil as well.

2.8. Notice a sixth situation of the following type where the complement clause is of nominal type.

8 (a) *ma:tavi aṅke: [vanta:L en̲patu] uNmai*
(b) *ma:tavi aṅke: [vant-atu] uNmai*
'It is true/a fact that Madhavi came there'

Significantly the finite construction *vanta:L* of personal type, and *vant(u)* of impersonal type in (8) above are in complementary distribution occurring before the complementizers *en̲patu* and *atu* respectively.

2.9. The seven types of syntactic constructions in (1)-(5), (7) and (8) presented and briefly discussed above reveal that both PFS and IFS coexist in modern Tamil syntax as complementary variants and the latter of which is not an instance of overnight development in the Dravidian syntax. As a matter of fact the IFS figuring in the syntax of the types presented in (1)-(5), (7) and (8) is an extension of an earlier IFS with modifications wherever necessary. One cannot argue that IFS figuring in the examples cited above has developed from PFS by dropping the agreement markers for which there is no scope at all.

3.0. IFS In Early Tamil

3.1. So far we considered the syntax of New Tamil where the evidence is massive to establish that Tamil syntax has its own contribution to the study of Dravidian IFS. True, Tamil does not have independent clause construction with IFS functioning as predicate in line with Malayalam. Same is the case with respect to early Tamil where IFS is preserved in subordinate particularly complement clause constructions only. Such construction types as *ceyt-ena* (=*ceytat-a:l/ceytatu po:l*), *ceyt-a:nku* (=*ceytatu po:l*), *ceyt-anna* (=*ceytatu po:nra*)/*ceyp-anna* (=*ceytatu po:nra*) and *ceyt-uli* (=*ceytav-i-Tattu*)/*ceyp-uli* {=*ceyyum-iTattu*) testify that the verbal constructions of *ceytu* and *ceypu* types occurring before *ena, a:nku, anna* and *uli* belong to IFS. For examples, see Appendix. There is also yet another causal phrase of *ceytam-a:ru* (=*ceytat-a:l*) type in early Tamil, the traditional analysis of which is *ceyta*+*ma:ru*. The verbal constructions of *ceytam* type attested in the causal phrase belong to IFS. The impersonal bound constructions of *ceyt-an* and *ceyt-av* types occurring before such personal markers as *-an, -aL, -ar,* etc., derive from IFS of **ceyt-am* type under discussion following the development of *-am* > *-an/av*.

3.2. The negative finite system in early Tamil is a case in point. Notice the personal negative finite forms *il-en, il-am, il-ay, il-ir, il-an, il-aL, il-ar, in-ru/il-atu* and *il-a* all belong to tenseless finite system *(Kurippu Vinai)*. The tensed negative finite system in early and middle Tamil are formed by adding past and non-past verbals of *ceytu* and *ceyku* types respectively before tenseless personal negatives referred to above. Such construction types as *ceyt-ilar* 'did not do-they (human)' and *ceyk-ilan* 'does not/will not do-he' are the patterns documented in early as also middle Tamil representing tensed negative finite system. Also to be noted along with this negative finite system are such types as *ceytanr(-um) il-am*, 'did not do-we',*pa:Tinr(-um)*+*ilam/pa:Tirr*+*il-am* 'did not sing -we, and *ceykinr*+*il-am* 'do not do-we' attested profusely in pre-New Tamil syntax, the tensed verbals in which belong to IFS. Notice the negative past finite construction *ceyt-ilan* has a complementary variant *ceyt-a:n allan*. The fact the *ceyt*(*u*) and *ceyt-a:n* in the examples under reference are in complementary distribution this testifies that the former occurring before *ilan* is an instance that belongs to IFS type.

4.0. IFS Moving Towards PFS

A notable development in the history of Dravidian Finite System is that the IFS without any formal change transformed itself into PFS referring to non-human singular finite system. Consequently, the past impersonal finite marker *-tu* figuring in *ceytu* type of IFS was pressed into service to refer to non-human singular past. In early Tamil, non-human past singular finite constructions of *ceytu* type are noticed to occur in the adverbial complement syntax. Consider the following examples from *Paripa:Tal:*

9 (1) *puṉal ... malar mi:tu uṟṟu + eṉa oru ca:r* (7.23,24)
'(said that) floods on one side touched upon the flowers'
(2) *aka vayal ... puṉal parantu + eṉa ... oru ca:r* (7.27,28)
'(said that) floods on one side spread inside the (paddy) fields'
(3) (*puṉal*) *pa:Tuva:r pa:kkam koNTu + eṉa* (7.31)
'(said that) floods submerged the residential colony of singing tribe'
(4) (*puṉal*) *a:Tuva:r ce:ri aTaintu + eṉa* (7.32)
'(said that) floods reached the residential colony of dancing artists'
(5) (*puṉal*) *kaḻaṉi vantu ka:l ko:ttu + eṉa* (7.33)
'(said that) the floods inundated the cultivable fields'
(6) *va:Lai pa:Lai uNTu + eṉa* (7.34)
'(said that) the Vaalai fish ate the spathe of areca palm'

The erstwhile impersonal verbal constructions *uṟṟu, parantu, koNTu, aTaintu, ko:ttu* and *uNTu* of ceytu type are noticed in the foregoing examples to function as past non-human singular finite predicate. This development perforced the IFS of *ceytu* type to assume the status of tense base before personal markers as also the relative suffix *-a* (e.g. *ceyt-a*) and empty morphs *-an-* and *-av-* (e.g. *ceyt-aṉ + ar,* and *ceyt-av + ar*). It is to be reiterated in this context that the IFS had no occasion to function as predicate in independent clause constructions of Tamil syntax, although the same had left its trace in different types of syntactic constructions.

5.0. Malayalam - A Solitary Retainer Of IFS

5.1. Despite the overwhelming evidence presented above in support of prevalence of IFS in Dravidian, the question why Malayalam has dexterously opted for IFS still remains unanswered and has to be answered. Both Tamil and Malayalam preserve a type of PFS associated with the inflectional increment *-av-* followed by such gender/human markers as *-aṉ, -aL, -ar,* and *-arkaL*. E.g. *Past*: *ceyt-av + aṉ, ceyt-av + aL, ceyt-av + ar* and *ceyt-av + arkaL*. *Non Past*: *ceyp-av + aṉ, veyp-av + aL, ceyp-av + ar, ceyp-av + arkaL*. These may be designated as Extended PFS (EPFS). EPFS with the non-personal human markers referred to above due to certain internal phonological changes developed in Tamil into a morphologically related

PFS devoid of the inflectional increment *-av-*, and marked with such personalized human markers as *-a:n/-o:n, -a:L/o:L, -a:r/-o:r* and *a:rkaL*.[1]

This may be illustrated as follows.

10 (1) *ceyt-av + an > ceyt-a:n/ceyt-o:n*
(2) *ceyt-av + aL > ceyt-a:L/ceyt-o:L*
(3) *ceyt-av + ar > ceyt-a:r/ceyt-o:r*
(4) *ceyt-av + arkaL > ceyt-a:rkaL*
(5) *pa:Tiy-av + an > *pa:Tiy-a:n/pa:Tiy-o:n*
(6) *koTupp-av + an > koTupp-a:n/koTupp-o:n*
(7) *koyp-av + aL > *koyp-a:L/*koyp-o:L > koyv-a:L/koyv-o:L*
(8) *pa:Tut-av + an > pa:Tut-a:n* (Kumari Dialect) 'sings - he'
(9) *pa:Tuk-av + an > pa:Tuk-a:n* (Kumari Dialect) 'sings - he'

5.2. As for the second person singular finite constructions of *ceyt-a:y/ceyt-o:y* (past) and *ceyv-a:y/ceyv-o:y* types, they are derivable from **ceyt-av + ay* 'did-you' (sg) and *ceyp-av + ay* '(will) do-you' (sg) types. Evidence to this effect comes from early Tamil. Consider the examples *e:ntin-av_ay* (Pari. 15.58) 'lifted-you', *aTT-av + ay* (Pari. 21.66) 'fought-you', *viritt-av + ay* (Pari. 21.67) 'expanded-you', and *peyarpp-av + ay* (Pari. 21.66) '(will) shift-you' (tr), from which such finite constructions as *e:ntin-a:y/e:ntin-o:y, aTT-a:y/aTT-o:y, viritt-a:y/viritt-o:y,* and *peyarpp-a:y/peyrpp-o:y* emerge respectively. Such non past constructions as *koyv-a:y/koyv-o:y* 'will pluck-you', and *varuv-a:y/varuv-o:y* 'will come-you' may now be considered to derive from **koyp-av + ay* (**koyup-av + ay*) and **varup-av + ay* respectively. The labial plosive *-p* being non-past suffix turns into labio-dental *-v-* in the output occurring in the intervocalic position. Notice the second person singular constructions of *ceyt-av + ay* and *ceyp-av + ay* types have nothing to do with the non-human plural finite constructions of the same formal types. These formally identical types seem to be dialect variants in origin.

5.3. The first (sg & pl) and the second (pl) finite constructions of *ceyt-e:n, ceyt-e:m/ceyt-a:m/ceyt-o:m, ceyv-e:n, ceyv-e:m/ceyv-a:m/ceyv-o:m, ceyt-i:r,* and *ceyv-i:r* types are problematic with respect to their underlying constructions. There are two possible explanations to resolve this problem. The presence of long personal markers therein might be due to structural pressure from such personal finite constructions as those with long personal markers namely *a:y/o:y, a:n/o:n, a:L/o:L,* and *a:r/o:r*. Alternatively they could be proposed to have been derived from such types of extended finite constructions as **ceyt-av + en̲* (I Sg), **ceyt-av + am/ceyt-av + em* (I Pl), **ceyp-av + en̲* and **ceyp-av + am/ceyp-av + em*.[2] The second person plural tenseless finite constructions *ca:n̲r̲avir* 'noble persons-you (are)' (Kali.139.1,33), and *u:ravir* 'villagers-you (are)' (Kali.147.53) are a case in point. The finite constructions *ca:n̲r̲i:r* (II Pl) and *u:ri:r* (II Pl) with long personal marker *-i:r* are derivable from their extended finite system referred to above. At the moment we are uncertain whether the extended finite constructions under proposal are a reality or hypothetical in character. We are however certain that the tense bases figuring in the PFS referred to above are all historically identifiable as impersonal finite constructions, a system which Malayalam has meticulously retained in its syntactic exposition.

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[1] This development is analogous to the development of **makan > ma:n** (as in **ce:ra-ma:n, atiya-ma:n,** and **malaya-ma:n**)/**mo:n** (as in Malayalam), **makaL > ma:L** (as in **ve:N-ma:L**) /**mo:L** (as in Malayalam), and ***makanru > makaNDu > mokuNDu (> movuNDu) > mo:Ndu** 'husband' as in Telugu. Such development noticed in (10) above has taken place in Telugu and Kannada as well.

5.4. In Tamil even tenseless EPFS has undergone similar development. E.g. *illa:t-av + ar > illa:t + a:r/illa:t + o:r, ceyya:t-av + ar > seyya:t-a:r/ceyya:t-o:r, nall-av + an̲ > nall-a:n̲/ nall-o:n̲, ca:n̲r̲-av + ar > ca:n̲r̲-a:r/ca:n̲r̲-o:r.*[3] This is a significant and far reaching innovation in Dravidian Finite System. However this innovation not only has been overlooked on the one hand but also has not been shared by Malayalam on the other hand despite it has an EPFS of the type referred to above. Consequently, this language did not mind the pros and cons of developing a PFS associated with such long personal markers as *-a:n̲, -a:L,* and *a:r* noticed for example in *ceyt-a:n̲, ceyt-a:L* and *ceyt-a:r.* Generally innovation in the finite system first takes place in third person and then spread to remaining persons. However Malayalam rejected the effects of sharing the innovation which contributed to the emergence of a new type of PFS from EPFS in third person with respect to agreement with subject NP as evidenced in Tamil. As a result, it has not availed itself the opportunity/benefit of developing a PFS with long personal markers not only in third person but in first and second persons as well. In the circumstances, Malayalam has opted for the IFS which is not shared by other Dravidian languages. We consider that the type of IFS attested in Malayalam is not an innovation, but is an instance of retention of an early finite system possibly traceable to PDr.

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[2] There are instances in early Tamil where the personal markers **-a:n̲** (masc), **-a:L**(fem), **-a:r** (hon. sg) and **-a:y** (II sg) are reported to alternate with **-o:n̲**, **-o:L**, **-o:r** and **-o:y** respectively both in tensed (Terinilai) and non-tensed (Kur̲ippu) finite system. (Tol. Col.Ce:n̲a: -195, 211, 212). However, the source of the finite system of these types is not identified in the traditional deliberation. Ce:na:varaiyar (Tol. Col. 211, commentary) contends that constructions of **ceyt-o:m** 'did-we' / **ceyv-o:m** 'will do-we' types are an erratic development of **ceyt-e:m / ceyv-e:m** types and hence the suffix **-o:m** in the former cannot be treated as an alternants of **-a:m** occurring in **ceyt-a:m / ceyv-a:m** types of finite system. We consider that his contention is totally unacceptable and deserves rejection without any reservation.

[3] It is customary among Dravidian linguists to treat the EPFS as noun-phrase construction (namely, participial noun) of relative clause type with "demonstrative pronouns, or their terminations" as their head noun (Robert Caldwell 1961: 540, R. Narasimhacharya 1969: 145). This observation is not theoretically sound and sustainable since such non verbal construction as **ca:n̲r̲avir** (Kali. 139.1, 33) 'nobles-you (pl) are', **ca:n̲r̲avar** (Kali. 39.47, 61.2, 120.16, 140.18) 'nobles- they (hum) (are)', **u:ravir** (Kali. 147.53) 'villagers-you (pl) are', **u:ravar** (Kali. 72.13, 74.15, 95.14) 'villagers-they (hum) (are)' etc., from which such constructions as **ca:n̲r̲i:r, ca:n̲r̲a:r/ca:n̲r̲o:r, u:ri:r, u:ra:r/u:ro:r** etc., derive cannot be treated as a noun phrase constructions involving relative clause. This holds good to **ceytavan̲** and its derivative **ceyta:n̲/ceyto:n̲** as well. The phonological rules inducted to derive the so called participial noun will be highly arbitrary and unmotivated. Hence we reject the theory of participial noun proposed by Dravidian linguists, and venture to treat it as a member of PFS holding that **ceyt-av/ceyp-av** construction types as extended impersonal finite verbs occurring before non-personal markers (i.e. gender suffixes) namely **-an̲**, -aL and **-ar** occurring after **-av**. .

6.0. IFS In Telugu

6.1. In Telugu the past PFS of *pa:Din-a:NDu* 'sang-he' type derives from the EPFS of *pa:Dinava:NDu* type. Traditionalists, however, consider that the PFS of the type referred to above is an instance of participial noun traceable to the Extended Participial Noun of *pa:Dina + va:NDu* type which according to them means 'one (masc) who sang', and is analyzable into Relative Participle i.e., *pa:Dina* plus pronoun i.e., *va:NDu* 'he' (P.S. Subrahmanyam 2002: 257). We do not subscribe to this analysis in view of the fact that such past PFS of *pa:Din + a:nu/a:mu/a:vu/a:ru* (II pl and hum. pl) 'sang-I/we/you(sg)/you (pl) & they (hum.)' type have no scope of being derived from participial nouns of traditionalists' conception. Further *va:(N)Du* figuring in such constructions as *pa:Dina + va:D-anu* 'sang-I (masc)', and *pa:Dina + va:D-avu* 'sang-you (masc) types cannot be treated as pronouns. If it is treated as such, then the first and second person masculine construction of the type exemplified above will have to be rejected as ungrammatical since *va:Du* as a pronoun and *-anu* and *-avu* as first and second person singular markers cannot coexist in a single personal finite construction. We therefore consider not only the traditionalists' analysis of *pa:Dinava:NDu* in terms of participial noun is unacceptable, but also the personal construction has to be re-structured as *pa:Din-av + a:NDu*, where *-a:NDu* is identifiable as masculine suffix without any personal reference. This type of revised analysis is analogous to *pa:Tiy-av + an/pa:Tin-av + an* 'sang-he' proposed for Tamil PFS from which *pa:Tiy-a:n* (old Tamil)/*pa:Tin-a:n* can be derived.

6.2. We do accept that the Telugu PFS of *pa:Dina:(N)Du* 'sang-he' type is derived from the EPFS of *pa:Dinava:(N)Du* type. However we propose that the construction *pa:Dinava:(N)Du* is analyzable into *pa:Din-av + a:(N)Du* which by the deletion of *-v-* of the inflectional increment *-av-* evolves into *pa:Din-a:(N)Du*. This provides the basis to derive the PFS of *pa:Din-a:nu* 'sang-I', *pa:Din-a:mu* 'sang-we', *pa:Din-a:vu* 'sang-you (sg)', *pa:Din-a:ru* 'sang-you (pl)/ they (hum)' are traceable to the underlying constructions of the following types.

11 (1) **pa:Din-av + anu > pa:Din-a:nu*
(2) **pa:Din-av + amu > pa:Din-a:mu*
(3) **pa:Din-av + avu > pa:Din-a:vu*

(4) **pa:Din-av + iru > *pa:Din-av + aru > pa:Din-a:ru*
(5) **pa:Din-av + aru > pa:Din-a:ru*

This analysis is extendible to such PFS of *pa:Dæ:nu* 'sang-I', *pa:Dæ:mu* 'sang - we' etc., types as well, the underlying constructions of which are traceable to the EPFS *pa:Diy-av + anu, *pa:Diy-av + amu* etc., types.

6.3. There is yet another third person past finite system of *pa:De/pa:De:* type in Telugu which is traceable to **pa:Den < *pa:Diyen*. his type is partially impersonal in character as it does not take first, second and third person human plural as its subjects. In the present writer's dialect, it takes *a:y(a)na, a:pe* and *adi* only as its subjects. E.g.: *a:ya(a)na/a:pe/adi pa:De/pa:De:* 'he (hon)/she or it sang'. The past bases of *pa:din* type occurring before personal markers and the relative marker *-a* do not function as adverbial participial both in Tamil and Telugu. It is noted to function as conditional participle in Tamil. These factors seem to suggest that the past bases of *pa:Din* type are traceable to the IFS of **pa:Tiyen* type which is attested in old Telugu as *pa:Diyenu* and as *pa:Denu* in later Telugu (Korada Mahadeva Sastri 1969: 229, 247).

6.4. The past bases of *pa:Ditu* (< **pa:Tit̲t̲u*, attested in Tamil) type is noticed in Telugu to occur in PFS of first and second person finite system. Consider: *pa:Diti* (< **pa:Ditin*)/ *pa:Diti-ni* 'sang-I', *pa:Diti-mi* 'sang-we', *pa:Diti-vi* 'sang-you (sg)', and *pa:Diti-ri* 'sang- you (pl/hon.sg). In Tamil, construction of *pa:Tit̲t̲u* type is noticed in early and middle tamil to function as impersonal finite predicate in sentential NPs. E.g.: *avan̲ pa:Tit̲t̲u* (= pa:Tiyatu) *uNmai* 'It is true that he sang'. In Telugu this has assumed the status of past base in PFS exemplified above.

6.5. Telugu has two non-past bases of *pa:Dutu* and *pa:De:* types in its PFS. E.g.: (1) *pa:Dut-a:nu* 'sing_I', and *pa:Dutu-nu* 'will sing-I': (2) *pa:De:* (< **pa:De:n*)/*pa:De:nu* 'sing-I', *pa:De:mu* 'sing-we'. Of these, *pa:Dutu* type is traceable to **pa:Tuntu*, the construction of which is noticed to occur in *Pur̲ana:n̲u:r̲u* of early Tamil. Notice the examples: *a:runtu* (380.6), *iriyuntu* (396.9), *iri:iyuntu (< *irikuntu)* (395.15), *ukaLuntu* (339.5), *ur̲aikkuntu* (384.7), *olikkuntu* (137.6), *nilaikkuntu* (386.15, 17), *kar̲akkuntu* (352.2), *kur̲u:untu (< *kur̲ukuntu)* (339.8), *par̲ikkuntu* (339.3), *taru:untu (< *tarukuntu) (24.9)*, *tu:ṅkuntu* (24.6, 400.14), *pa:yuntu* (24.3), *pu:kkuntu* (137.8, 396.2), *peyarkkuntu* (395.11), *mar̲ukkuntu* (343.2), *val̲ankuntu* (396.1), *vaikuntu* (384.9). In Kumari dialect of Tamil, we come across a present paradigm with present bases of *pa:Tuku* type. E.g.: *pa:Tuk-a:n̲ (< *pa:Tuk-av + an̲)* 'sings-he', *pa:Tuk-a:L (< *pa:Tuk-av + aL)* 'sings-she', *pa:Tu-ku* 'sings-it' and *pa:Tuk-a* 'one who/that which sings'. It is significant that *pa:Tuk-a:n̲, pa:Tuk-a:L, pa:Tuk-a* etc., have such dialectal variants as *pa:Tuy-a:n̲, pa:Tuy-a:L, pa:Tuy-a* etc., in Kumari dialect. The present bases of *pa:Tuku* type attested in Tamil have been retained in the Telugu present paradigm of *pa:De:nu* (< *(pa:Duye:nu)* < **pa:Tuk-e:n)* 'sing-I', *pa:De:mu* (< *(pa:duye:mu)* < **pa:Tuk-e:m)* 'sing-we', *pa:De:* (< *(pa:Duy-e:)* < **pa:Tuk-ay pa:Tuk-a*, in Tamil) 'one who/that which sings'.

6.6. It is reported in R. Narasimhacharya (1969: 132) that Telugu has a type of finite paradigm functioning as contingent future although it is derived from non-past EPFS of **a:Tuk-av + en/-em/-av/-ar* types. Consider the examples that follow: *a:De:nu/a:De:mu/a:De:vu/a:De:ru* 'may play/dance-I/we/you(sin)/you(pl/hon.sg)'. Also see footnote 6 for Kannada situation.

7.0. The Kannada Situation

7.1. Kannada does not lag behind in preserving IFS in its finite stock. However this language has suffered deviation in retaining a complementary variant of the past IFS in the form of tense base occurring before personal markers. As was pointed out earlier with reference to Tamil, the IFs first turns to PFS referring to non-human singular. Consequently, two structural innovations are noticed to have taken place in this process. First, the IFS is re-analyzed into verbal base + non-human singular suffix, of which the latter was originally the tensed impersonal finite marker. Following this development, the tensed impersonal finite marker turns into tensed personal marker. To make clear this development, when the past impersonal construction *koy-tu* 'plucked' with *-tu* as impersonal tensed suffix develops into personal finite construction, the suffix under reference turns into tensed personal suffix referring to non-human singular. The examples furnished from Tamil in (9) testify this development. Secondly, once the IFS is re-analyzed as PFS without any formal change, the former assumes the status of tense base before other personal markers and the relative suffix *-a*. E.g. *band-anu* 'came-he', *band-a* 'one who/ that which came'. Along side, the past IFS assumes adverbial function as well, and for which it is not necessary that the IFS should turn into PFS, Malayalam is a case in point in this respect. E.g. *vannu* (Mal)/*vantu* (Ta)/*bandu* (Kan) 'having come'. Kannada is not consistent in this regard.

7.2. Past paradigm of verbs of *ma:Du* 'to do'/*kuDi* 'to drink' class is theoretically significant in certain respects. Notice the material presented below from Kannada dialects first.

Tiptur Kannada (A.S. Acharya 1971)

12 (1) (a) *ma:Did-a* 'did-he' (p. 43)
(b) *ma:Di-tu* 'did-it' (p. 44/54)
(c) (*ma:Didu/ma:Di* 'having done')
(2) (a) *keDid-a* drank-he' (p. 43)
(b) *kuDi:tu (< ?*kuDiytu)* 'drank-it' (p. 44)
(c) (*kuDidu* 'having drunk')

Halakki Kannada (A.S. Acharya 1967)

13 (1) (a) *ma:Did-a* 'did-he' (p. 82)
(b) *ma:Dutu (< *ma:Ditu)/ma:Ditu* 'did-she/it' (p. 83, 104/88)
(c) (*ma:Didu/ma:Di* 'having done')
(2) (a) *kuDud-a (*kuDidu > kuDudu + a)* 'drank-he' (p. 82)
(b) *kuDi:tu (< ?*kuDiytu)* 'drank-she/it' (p. 83)
(c) (*kuDidu* 'having drunk')

Nanjangud Kannada (U.P. Upadhyaya 1968)

14 (1) (a) *ma:Dd-a (< *ma:Dud(u)- < *ma:Did(u)-)* 'did-he' (p. 43)
(b) *ma:Dtu (< *ma:Dutu < * ma:Ditu)* 'did-it' (p. 43)

Mysore Kannada (U.P. Upadhyaya and N.D. Krishnamurthi 1981)

15 (1) (a) *kuDd-e (< *kuDud(u)-) < *kuDid(u)-* 'drank-I' (p. 118)
(b) *kuDitu* 'drank-it' (p. 121)
(c) *kuDdu* 'having drunk' (p. 163)

Havyaka Kannada (D.N.S. Bhat 1971)

16 (1) (a) *ma:Did-a* 'did-she(hon)' (p. 29)
(b) *ma:Dittu* 'did-it' (p. 29)
(c) (*ma:Didu/ma:Di* 'having done')

The past impersonal form *ma:Di,* though predominantly used, belongs to a different paradigm which seems to have been either dislocated in or displaced from Kannada finite system. Since *ma:Did(u)* 'did' has been retained in the noun modifier namely, *ma:Did-a* 'one who/that which did', we treat the former as the verb in adverbial function. Notice *ma:Did(u)* is as old as *ma:Di*.

7.3. The non-human/non-masculine past singular finite constructions figuring in the Kannada dialects being the products of re-analysis theoretically belong to IFS in origin, and the same holds good to the past bases noticed before the gender and personal markers as also the relative suffix *-a*. Unlike in Tamil and Malayalam, the past bases (namely *ma:Did, ke:Lid, kuDid, naDed* etc.) and the erstwhile past finite constructions belonging to IFS which are now re-analyzed as non-human/non-masculine past singular construction (namely *ma:Dit-tu, ke:Lit-tu, kuDi-tu, naDe-tu* etc., and their dialect variants) are identifiable as complementary alternants in Kannada. This provides the necessary basis to trace them to such earlier versions as **ma:Tintu, *ke:Lintu, *kuTiyntu, *naTayntu* and the like.[4] Notice these

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[4] Robert Caldwell (1961: 497) makes reference to the Kannada forms **ar̲id-anu** and **ar̲it-anu** 'knew-he'. The past bases of these forms are **ar̲id** and **ar̲it** which Emeneau (1994: 93) also has noted in his deliberations on South Dravidian Languages. The Tamil version is **ar̲int**. This necessitates to derive the Kannada and Tamil past bases of the verb **ar̲i** 'to know' from ***ar̲iynt(u)** which is an instance of past impersonal finite construction analyzable into ***ar̲iy-ntu**. See 7.3. of the main discussion for further elucidation.

reconstructed versions have nothing to do with PFS since the morphological alternants _*-intu_ and _*-ntu_ therein are tensed impersonal finite segments. Consequently the past forms _*kuTiyntu_ 'drank', _*naTayntu_ 'walked' etc., represent only intermediate stage in the derivational process, and if so what is the ultimate source from which they evolve? For a discussion, see R. Kothandaraman (2001) and also the deliberation in 7.4. below.

7.4. The present personal constructions _kuDiyutt-a:ne_ 'drinks-he' and _naDeyutt-a:Le_ 'walks-she', for instance, have the tense bases _kuDiyutt(u)_ and _naDeyutt(u)_ in Kannada. These tense bases derive from _*kuTiyuntu_ and _*naTayuntu_ of _*ceyuntu_ type attested in early Tamil. See 6.5. above for Tamil examples. Analogous to this development, past impersonal finite forms such as _*kuTiyntu, *naTayntu_ etc., have the scope of being treated as contracted versions of _*kuTiyintu, *naTayintu_ etc. Both in past and non-past/present reconstructed impersonal finite forms, the phonological entity _-tu_ in _*-intu_ and _*-untu_ appears to be an adjunct without any grammatical significance. As a result, _*-intu_ (past) and _*-untu_ (non-past) are constrained to be treated as single unanalyzable morphemic segments.[5] We leave this area for further exploration.

7.5. The Kannada situation is not different from Tamil in that the PFS with such agreement markers as _-o:nu, -o:Lu, -o:ru_ and _-o:du_ derive from EPFS.[6] Notice the following explication.

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[5] In *__ma:Tintu__ and *__kuTiyntu/__*__naTayntu__, we come across the complementary variants **-in** and **-n** occurring after the verbal bases **ma:Tu** and **kuTi/naTa(ma:Du** and **kuDi/naDe,** in Kannada) respectively, the nasal being dental in character and traceable to labial nasal. Notice **-untu** figuring in the *__ceyntu__ type of non-past impersonal finite construction is an extension of **-um** with labial nasal (Tol. Col. Ce:na:-292). This suggests that **-intu** retained in *__ma:Tintu__ types of constructions in an extension of **-im** with the addition of **-tu**. This holds good to the nasal alternants **-n** occurring in *__kuTiyntu__, for instance, before **-tu**. What is the grammatical significance of these variants? Originally, these variants must have functioned as past morphemes which, following the addition of the adjunct **-tu** (due to certain structural pressure, the source of which is little known at the moment) must have lost its grammatical significance. Consequently the entire sequences namely *__-intu__ and *__-ntu__ noticed in *__ma:T-intu__ and *__kuTiy-ntu/__ *__naTay-ntu__ etc., seem to have turned into unanalyzable tensed impersonal finite markers which have manifested and are re-analyzed differently in individual languages namely Tamil and Kannada following phonological changes.

[6] It is to be noted that Kannada does not enjoy the benefit of acquiring such constructions as **band-a:nu** 'came-he', **band-a:Lu** 'came-she', **band-a:ru** 'came-he(hon)' etc., from such EPFS as **band-av+anu, band-av+aLu, band-av+aru** etc. Narasimhacharya (1969:132) however draws our attention to the presence of contingent future in Kannada which basically with long personal markers namely **-e:nu/-e:vu/-a:nu/-a:Lu/-a:ru** seems to belong to past finite system. E.g. **a:Diy-e:nu/-e:vu/-a:nu/-a:Lu/-a:ru** 'may play/dance-I/we/he/she/he (hon) or they (hum)'. Similar system is reported in Tiptur Kannada as well (A.S. Acharya 1971: 46). Consider the examples: **band-e:nu/-a:nu/-a:Lu/-a:tu/** 'may come-I/she/it', **band-e:vu/-a:ru/-a:vu** 'may come-we/they(hum)/they(non-hum)'. It is really problematic that the past PFS is pressed into service to function as contingent future. This seems to be anomalous and requires a thorough investigation.

17 (1) *ho:d-av + anu > ho:d-o:nu (= Ta. po:nt-o:n)* 'went-he'
(Ta. po:nt-av + an)

(2) *ho:d-av + aLu > ho:d-o:Lu (= Ta. po:nt-o:L)* 'went-she'
(Ta. po:nt-av + aL)

(3) *ho:d-av + aru > ho:d-o:ru (= Ta. po:nt-o:r)* 'went-they (hum)'
(Ta. po:nt-av + ar)

(4) *koTT-av + aLu > koTT-o:Lu (= Ta. koTutt-o:L)* 'gave-she'
(Ta. koTutt-av + aL)

(5) *ho:p-av + anu > ho:p-o:nu (= Ta. po:v-o:n)* 'will go-he'
(Ta. po:p-av + an)

18 (1) *ho:gadd-av + anu > ho:gadd-o:nu (= Ta. po:ka:t-o:n)*
(Ta. po:ka:t-av + an)

(2) *koDad-av + aru > koDad-o:ru (= Ta. koTa:t-o:r)*
(Ta. koTa:t-av + ar)

19 (1) **kuDiyuv + anu > kuDiy-o:nu (= Ta. kuTipp-o:n)* 'will drink-he'
(Ta. kuTipp-av + an)

(2) **kaliyuv-anu > kaliy-o:nu (= Ta. karp-o:n)* 'will learn-he'
(Ta. karp-av + an)

(3) *kuDiyuv-adu > kuDiy-o:du* (Not available in Tamil) 'will drink-it'
(Ta. kuTipp-a + tu)

Significantly, for instance, *kuDiv-anu* and *kuDiy-o:nu* both mean 'will drink-he' derive from **kuDiyuv-anu* and notice the form *kuDiyuv* which being the tense base is traceable to the impersonal finite verb **kuDiyum (= Ta. kuTikk-um)*. In Kannada, the future bases of **kuDiyuv* type are ultimately derivable from the IFS of **kuDiyum* type which in Tamil belong to *ceyum (= ceyyum)* type.

8.0. Simplification of Stacked Finite System

8.1. The finite system figuring in the input in (10) above is a three tier system representing three stages of development. The first tier finite system is of *ceytu* type, and the two tier finite system is represented by *ceyt-a(v)* type evolved from the finite system is represented by *ceyt-av + an/aL/ ar/arkaL/ai* and *ceyt-a + tu* types with agreement markers. Malayalam has retained the single tier finite system namely IFS if *ceytu* type. Notice the single tier finite system is also retained in the PFS of ceyt-an + PM, where PM refers to personal markers. E.g. *ceyt-an + aL/ar/a/ru(< tu)*. In this case, the two tier finite system being impersonal in character is of *ceytan* type (which probably evolves from **ceyt-am* type).[7] It is thus clear that the first tier finite system is the core system which is preserved in the EPFS of the types referred to above.

8.2. In early Tamil, we come across such non-past PFS of *ceym + ar, ceym + a:r, ceyum + o:n/o:L/o:r, ceyv-an + PM,* and *ceym-an + a:r* (e.g. *enm-an + a:r*, profusely attested in Tolkappiyam text) types. Of these, the first three belong to two tier finite system, and the last two to three tier finite system. All these types have *ceym/ceyum* type of impersonal non-past finite forms as their bases. Although *ceym + a:r* and *ceyum + o:n/o:L/o:r* types look two tier in character, they are derivatives of three tier finite system namely of *ceym-av + ar (< ceyum-av + ar)*, and *ceyum-av + an/aL/ar* types respectively. This derivation is analogous to that of *ceyt-a:n/ceyt-o:n*, from *ceyt-av + an*.

9.0. Subordinate Clause As Impersonal Syntax

9.1. The finite system functioning as predicate in the Dravidian subordinate clause constructions, as a matter of fact belongs to IFS. This provides necessary basis to maintain that chronologically IFS is earlier than PFS and hence the subordinate clause is an instance of impersonal syntax, a system which is preserved in Malayalam even in main clause construction. This conclusion is inevitable in view of the fact that subordinate clause construction with IFS was the original independent clause which due to the development of PFS from IFS base was constrained to assume the subordinate and/or relative clause status. An important consequence of this development is that the subordinate clause was restrained from being relativized with a head noun originating from the same clause. If the hypothesis that IFS evolves from PFS is a sustainable one, then we will be under theoretical compulsion to hold that the predicate system of the subordinate clause was originally of PFS type which later was reduced to IFS type. Since the predicate system of the subordinate clause of any type is reconstructible to the PDr (or possibly still to an earlier stage) into IFS type on the basis of comparative evidence along with PFS type figuring in the independent Dravidian clause constructions. We consider that both IFS and PFS were in coexistence in proto system itself. This, however, does not imply that IFS has evolved from PFS.

9.2. It is significant that in early Tamil the PFS is also noticed to function as predicate in the subordinate clause construction. E.g. *oli-cinai ve:ṅkai koykuvam cenruli* (Akam. 48.6) 'as we went to pluck Vengai flowers/leaves'; *a:Tinir pa:Tinir celine:, na:Tum kunrum oruṅki: yumme:* (Puram. 109.17,18)

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[7] In early Tamil we come across causal constructions of **ceytam + a:ru** (**=ceytat-a:L**) 'since one did' type, and the past construction of ***ceytam** (**=ceytatu**) type in which belongs to IFS. Korada Mahadeva Sastri (1969: 264) reports a relative clause NP namely **nilpinam puNyambu** 'the virtuous deed which one accomplished' from old Telugu. The verbal construction **nilpinam** (Ta. niruviya) belongs to **ceyt-am** type.

'if you go dancing and singing (he) will give (you) his country and hills together (as gift)'. Notice the personal finite verbs *koykuvam* 'will pluck-we' and *a:Tinir* 'danced-you' (pl)/*pa:Tinir* 'sang-you' (pl) belonging to PFS function as verb modifiers in the subordinate clause constructions. Traditional scholarship identifies such personal verb modifiers as *murreccam*. The impersonal counterparts of the foregoing personal verb modifiers as *koyya, a:Ti* and *pa:Ti* respectively. The examples under reference cannot be taken as an evidence to hold that the impersonal verb modifiers referred to above are the reduced versions of their personal counterparts. The occurrence of PFS as verb modifier in early Tamil was an innovation which had not spread to any Dravidian language including Malayalam. Incidentally the occurrence of PFS in the slot of impersonal verb modifier testifies that the latter i.e., the impersonal modifier belongs to IFS.

APPENDIX

I ceyt-ena (= ceyt + PM a:ka/ceytat-a:l)

Masculine Subject

(1) *turaivan vant-ena, civantanru nutal* (*Aiṅg.* 105.3,4)
'Blushed the face (of the wife) as Turaivan (the husband) came.'

Feminine Subject

(2) *ko:makal cinant-ena, a:yam kai-tolutu* (*Narr.* 300.1,2)
'Bowed themselves with folded hands the attendants as the queen/ princess got enranged.'

Human Plural Subject

(3) *tollo:r ma:ynt-ena-t tuLaṅkal cella:tu* (*Puram.* 58.4)
'Without getting disheartened as the forefathers were no more.'

Non-human Singular Subject:

(4) *ke:lal iTampaTa vi:lnt-ena, anravaN uNNa:t-a:ki* (*Puram.* 190.6,7)
'There (the tiger) without eating the prey (i.e., the wild pig), that day as the latter fell on the left side.'

II ceyt-a:ṅku (= ceytat-a:l)

(5) *(ta:t-uN) tumpi po:tumuranr a:aṅku (o:tal) antaNar ve:tam pa:Ta* (*Pattup.* 6.655)
'The brahmins chanted Vedas (the sound of which) was comparable to the humming of beetles around flower buds.'

III ceyt-anna (= ceytatu po:nra)

(6)*ya:nukiTant anna akaneTun teruv + il* (*Narr.* 200.3)
'In the street which was wide and long comparable to (the broadness and the length of) the river.'

IV ceyp-anna (= ceyvatu ponra)

(7)*ninru ka:Np anna ni:Nmalai* (*Puram.* 211.3)
'The long stretch of mountain comparable to a person majestically standing and witnessing (something).'

(8)*imaiti:ypp + anna kaNNi:r.* (*Kuru.* 4.2) (*ti:yppu (= tiyppatu)*)
'Tears that scorch the eyelids.'

(9)*va:nto:y vanna puricai* (*Puram.* 21.3) (*to:yvu < *to:ypu (= to:yvatu)*)
'Forts that look touching the sky.'

V ceyt-am + a:ru (= ceyt-at + a:l)

(10) *akan-turai-y u:ran-um vant-an-an*
ciranto:n peyaran piranta ma:r-e: (*Narr.* 40.11,12)
'The father too of the village with vast water yard came (home) as a son was born to him as the inheritor of the name of the grandfather with noble qualities.'

VI ceyt-arru (= ceytatu po:nratu)

(11) *(oruvan) (kunre:ri) ya:naip po:r kanT-arru* (*KuraL* 758)
'Like the one (masc.) who climbed on the hill and witnessed the elephant fight (positioning himself safely).'

VII ceyt-uli (= ceytak-ka:l/ceytav-iTattu)

(12) *ve:ṅkai koykuvam cenr + uli* (*Akam.* 48.6)
'The place where we went to pluck Vengai (flowers).'/
'On the occasion when we went to pluck Vengai (flowers).'

VIII ceyp-uḻi (= ceyyum iTattu)

(13) *iṉite: (ka:Nuṉar-k) ka:Np + uḻi va:ḻtal* (*Naṟṟ.* 216.2)
'Pleasant it is to live at a place one could notice us.'

(14) *ni:L kaḻal maṟavar celv + uḻi-c celk(u)-* (*Puṟam.* 93.10)
'One should go to the place where the warriors wearing long anklets go.

ABBREVIATIONS

Aiṅg-Aiṅguṟunu:ṟu (SA)
Akam-Akana:ṉu:ṟu (SA)
Ce:na:-Ce:ṉa:varaiyam
Col-Collatika:ram
Kalittokai (SA)
Kuṟu-Kuṟuntokai (SA)
Naṟṟ-Naṟṟiṇai (SA)
Pari-Paripa:Tal (SA)
Pattup-Pattupa:TTu (SA)
Puṟam-Puṟana:ṉu:ṟu (SA)
SA-Sangam Anthology
Tol-Tolka:ppiyam

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BRAIN AND LANGUAGE (Seminar Proceedings)

P.A. Suresh, Annie Monsy, S. Maya (Eds.), HB Demy 1/8, pp. 213

A compilation of 7 papers on various aspects related to the connection between brain and language. The papers deal in depth with the study on how brain damage can disrupt the use and system of language functioning in children as well as in adults and looks at unique opportunities to find out more on the anatomo-physiological organization of the human brain, and in identifying the physiological components in the mental processing of language.

AUTOMATIC TRANSLATION (Seminar Proceedings)

Harikumar Basi (Ed.), HB Demy 1/8, pp. 200, Rs. 200/- (US$ 40/-)

This book is a compilation of six papers by researchers and research groups actively engaged in *Machine Translation* in India. The elaborate presentation of various approaches to *Machine Translation Systems* that are already working, and ongoing projects, would benefit students and researchers in the field. Each paper is followed by discussions touching on all aspects of the problem, with active participation of linguists and computer scientists.

INDEX OF TOLKAPPIYAM (TOLKĀPPIYAC COLLAḌAIVU)

P.V. Nagarajan & T. Vishnukumaran, Demy 1/8, pp. 372, Rs. 300/- (US$ 60/-)

This work is a continuation of the variorum edition of the same published in 1996. For each word, the occurrence, meaning and grammatical details are given. This work will be of much use to researchers on Tolkappiyam and grammatical treatises in Tamil.

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RELEVANCE OF CORPUS IN LANGUAGE RESEARCH AND APPLICATION[1]

NILADRI SEKHAR DASH & BIDYUT BARAN CHAUDHURI
Indian Statistical Institute, Kolkata

Abstract

The easy availability of corpus, and its fast accessing techniques have opened up many new areas of linguistic research which were unknown to the linguistic community even a few decades ago. The data and results obtained from corpus have put intuition-based language study under a strong challenge because in most cases intuitive observations are proved either to be wrong or bias while compared with the findings retrieved from corpus. Thus, corpus has proved its value by providing us an empirical support for theory making as well as for theory modification which was entirely missing in intuitive linguistics. However, to come to its present position corpus linguistics has had to fight a long battle against the intuitive and generative linguists who always prefer studying language from the point of linguistic competence and innateness rather than from the point of linguistic performance. Now, the scenario is vastly changed. Scholars now agree that corpus-based language study is far more reliable and authentic, both in language description and prescription, than any hypothesized sample citation and theorization. With such a promising background it has been a challenging job for us to identify possible target users of corpus as well as to visualize possible application of corpus in various domains of linguistic research and education. In this paper we initiate one such attempt..

Keywords: Corpus, grammars, machine translation, stylistics, sociolinguistics, dictionaries, language learning, lexicography, semantics, polysemy, stylistics, speech, etc.

1. Introduction

The term *corpus* has a Latin origin, meaning 'body'. In the present context it refers to a collective body of texts which are representative samples of different varieties of language preserved in machine readable form. Theoretically, a corpus should be (C)apable (O)f (R)epresenting (P)otentially (U)nlimited (S)elections of texts for research and application. In fact, the name CORPUS can be derived from its features it implies in the following way:

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[1] This paper is a revised version of the paper presented in IWTDIL 2001, held at CVPRU, ISI, Kolkata on 28th March, 2001. The paper is a logical continuation of our earlier paper entitled "Corpus Generation and Text Processing", published in International Journal of Dravidian Linguistics Vol. 32, No. 1, January, 2002. If this paper is read in continuation of the earlier paper, one can have a clear idea how language corpora are designed and developed, how corpora texts are processed for retrieving information, and how these information are used in various fields of language research and education.

C: Compatible (to computers)

O: Operational (in research and application)

R: Representative (of the source language)

P: Processable (by both machine and human)

U: Unlimited (in amount of data)

S: Synchronic (in formation and text representation)

Unless defined otherwise, we should consider that a corpus should possess all the properties mentioned above. The exception can be noted for historical corpus which is neither unlimited nor synchronic. However, such corpus is mostly confined within a specific peripheral zone of corpus linguistics having marginal importance in the whole gamut of empirical language research. By all means a corpus should:

- be a good representative of the language
- be large and balanced to all disciplines
- try to capture almost all the linguistic features of the language
- be easily retrieved and used by the end-users, and
- be subjected to any kind of empirical investigation and analysis.

There are various issues related to corpus development and text processing which may vary depending on the type of corpus and the target of use. For instance, the issues related to speech corpus development are sure to vary from the issues related to written corpus development. While developing a written corpus we have to take care of aspects like determination of target users, choice of documents, selection of time-span, manner of data input, size of corpus, problem of copy-right, manner of sampling, problem of text screening, management of corpus file, editing of input data, processing of texts, analysis of text, etc. The characteristic features, the issues of design and development of various corpora, the matter of contents, the methods of processing, types of text annotation, part-of-speech tagging, parsing, sense decoding, information retrieval, multidimensional usability of corpus etc. are discussed in some details in Aarts, and Meijs, Eds. (1984,1986), Garside, Leech, and Sampson, Eds. (1987), Aijmer and Altenberg, Eds. (1991), Johansson and Stenstrom, Eds. (1991), Sinclair (1991), Svartvik, Ed. (1992), Oostdijk and deHann, Eds. (1994), McEnery and Wilson (1996), Percy, Meyer, and Lancashire, Eds. (1996), Thomas and Short, Eds. (1996), Garside, Leech, and McEnery, Eds. (1997), Knowles, Williams, and Taylor, Eds. (1997), Lancashire, Carol, and Meyer, Eds. (1997), Ljung, Ed. (1997), Ooi (1997), Young, and Bloothooft, Eds. (1997), Biber, Conrad, and Reppen (1998), Kennedy (1998), Oakes (1998), Kirk, Ed. (2000), Mair and Hundt, Eds. (2000), and others.

In this paper we make an attempt to understand how machine readable corpora can be best used in language research and education, and how corpora can provide good empirical support for studies in different branches of linguistics. After nearly five decades of corpus use in different sub-domains of linguistics, psychology, statistics, and in the field of information technology, it is now almost clear to us that the application of corpora is not confined within teaching and research of language since many more new application areas of corpora are identified by experts. The multifunctionality of corpora is, perhaps best perceived by Svartvik (1986: 9) who has visualized that corpora can be used in:

> "lexicography, lexicology, syntax, semantics, word-formation, parsing, question-answer synthesis, software development, spelling checkers, speech synthesis and recognition, text-to-speech conversion, pragmatics, text linguistics, language teaching and learning, stylistics, machine translation, child language, psycholinguistics, sociolinguistics, theoretical linguistics, corpus clones in other languages such as Arabic and Spanish - well, even language and sex."

The scope is further expanded in observations of Atkins et al. (1992), Leech and Fligelstone (1992), McEnery and Wilson (1996), Rundell (1996), Barlow (1996), Thomas and Short (1996), Biber (1996), Biber, Conrad, and Reppen (1998), Teubert (2000), and others. In a sample study, we have found that English corpora (both spoken and written) have been used for about five hundred different types of research and education covering almost all domains and branches of linguistics[2]. Detailed information about these studies cannot be furnished here because of space constraints; however, a few important areas are identified in the following sections of this paper.

2. Potential Uses Of Corpora

It is known that corpora have immense potential for various applications. Results of different statistical counting (frequency of characters and words, average word and sentence length, etc.) on corpora can be used for designing course books for language learners, building OCR systems, developing spell-checkers, designing tools for machine translation, creating lexical data-bases, etc., which can be of use to language learners and users, researchers, writers, academicians, teachers, students, scholars, publishers, language learners and others.

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[2] One can surf the bibliography of ICAME home-page <www.khnt.hit.uib.no/icame/manuals/icambib3.htm> complied by Bent Altenberg of Department of English, Lund University, Sweden. It contains only a partial information on works done on English corpora. It can be assumed that similar such works are/can be done in other languages. However, no information of such work on Indian language corpora is available to us.

Concordance on corpora can help us to identify the actual contexts of use of words. The system can throw light on the pattern of distribution of words as well as on the role of the context in determining their actual meanings. Similarly, the method of Local Word Grouping (LWG) can help us in determining actual lexical category of words used in the texts[3].

Corpora-based grammars can truly represent the state-of-the-art of a language as they faithfully reflect how language is being used in reality. Such grammars (e.g. *COBUILD Grammar of Modern English*) are good for both language teaching and syntactic parsing. Besides, corpora-based core grammars are fine tools for cross-linguistic research and education, as they provide opportunities for interlingual studies, information interchange, translation etc. In a multilingual country like India such grammars can probably enhance national integrity through inter-lingual communication[4].

Corpora can be used for developing both monolingual and bilingual dictionaries as well as dictionaries of technical and scientific terms, spellings, polysyms, homonyms, homophones, homographs, paronymns, acronyms and abbreviations, and many others. Some recently published and widely acclaimed dictionaries contain information about lexical sub-categorization, contextual restriction, polysemous connotation of the entries besides their phonetic, morphological, semantic and syntactic information which are entirely retrieved from corpora.

Machine translation systems generally use bilingual corpora as test-beds because the increasing availability of bilingual corpora has made significant contributions to the actual capabilities of systems. Major domain specific bilingual aligned corpora are enabling the present machine translation systems to adopt a self-organizing approach to supplement the traditional knowledge-based approach. Besides, bilingual corpora, along with knowledge-bases for distance-minimization between source and target language, are in regular use for domain specific machine translation technology within controlled languages, where all syntactic and lexical/terminological ambiguities are suppressed (Teubert 2000: 10). Such systems not only minimize the distance

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3. For example, in Bangla many words (kAche "near", nice "under" etc.) which are lexically categorized as post-positions, are found (by LWG on corpora) to be nouns, both structurally and functionally. Only when they are used after nouns they discharge the role of post-positions.

4. In fact, this was one of the reasons behind the initiation of the TDIL project of DOE, Govt. of India, in 1991 (See Murthy and Deshpande 1998).

of mutual intelligibility but also enhance the translatability between the two languages which are used for designing bilingual corpora.

In applied linguistics, corpora are used in language teaching as they provide a substantial resource for extracting and studying authentic language data with the authority of attested use. The data might be presented directly to the students for class-work or may be used in the preparation of teaching materials. In the area of computer aided education, corpora are utilized for understanding the function and use of various linguistic items as well as for teaching language skills to learners. Biber, Conrad, and Reppen (1998: 82) have shown us that instructions based on the actual patterns of use obtained from corpora can better equip students for producing and understanding language more appropriately across different contexts. Similarly, for teaching various lessons, answering various quarries of students, and responding to specific subject domains, corpora are essential. Thus, there is no doubt about the immense practical utility of corpora in the field of language learning, which inspires Barlow (1996: 2) to comment:

> "Corpora can reveal not only the range of patterns of a language that the learner must assimilate, but also their frequency, which is an important factor in materials development and syllabus design. Moreover, the use of corpora has the potential to radically alter the field of second language learning and perhaps linguistics as well."

Corpora, after being properly processed and categorized, can be used as an aid for various kinds of text preparation such as writing articles, books, papers, etc. Various computer tools like word processors, spell checkers etc., can use data from corpora for preparing and editing texts, for correcting errors in spelling, for providing spelling alternatives etc. (Winograd 1983:26). Such tools have proved to have strong commercial viability.

Thus, we can foresee the possible areas where corpora can be used. We can also assume that corpora will become natural and indispensable source in the field of language study, description and teaching as they already are for lexicography (Ooi 1997, Landau 2001). Corpora will no longer be confined to dictionary publishers and NLP researchers, as vast amounts of machine-readable texts are now available on-line for multi-dimensional use by the users. Moreover, it will be possible for any user to create a customized, ad hoc corpora for studying some particular area of interest. Besides, the statistical and analytic tools used for corpora study will become more powerful so that all text processing techniques can be carried out along with theoretical analysis of corpora (Rundell 1996: 10) in various domains.

3. Potential Users Of Corpora

Until now there have been three main types of corpora user (Rundell 1996: 10):

(i) people working in NLP who require large amounts of data.

(ii) lexicographers who need 'balanced' corpora reflecting a wide range of text-types, and

(iii) some enthusiasts working in various areas of linguistics who happen to be interested in corpus-study.

In the mean time corpora are already accepted as supplementary to the data based on intuition as well ass a fundamental part of theory construction, and hypothesis verification (Barlow 1996: 2). We guess that as corpora grow and include large sub-sections of texts classified by date, subject-matter, region, age-group, sex, etc., they will become a valuable data source to the people who create them as well as to the people who are interested in the text's language. Keeping this in mind, Atkins et al. (1992:3) try to classify corpora users in the following way:

- language specialists (people interested in the language of the texts),
- content specialists (people interested in the content of the texts as representative of a larger collection), and
- media specialists (people interested in the texts themselves as a convenient body of test material for electronic media).

Among the language specialists, the lexicographers can consult corpora for information on the actual and specific usage of words, lexemes, phrases, idioms, etc. They can process corpora in various ways in order to develop lexical databases they need for dictionary development. The terminologists and technical writers can also use specialized corpora representing technical areas for the enhancement of terminology databases and standardization of technical terminology.

The content specialists generally include historians, literary critics, sociologists, advertisers, etc. They are interested in utilizing corpora for finding citation of fixed words or phrases, and for drawing out linguistic trends and overall patterns of language use. The historians can use them to track the development of opinions and ideas through study of words, phrases and sentences that refer to them. They can also use dated and analyzed corpora to discover implicit time-stamps and place-stamps which they can apply to identify documents of unknown origin.

The literary critics can use corpora for research in stylometrics. Statistical analysis of word-use plays a crucial role in determining ascription of dubious work to a known author (Elliott and Valenza 1996). Such techniques become more effective when linguists discover the significant features which are present at a higher level than individual words. Besides acting as a mass training ground for these techniques, corpora can also be useful as a source for statistical information on the differences of style characterizing groups demarcated by age, sex, period, country of origin, etc. The sociologists can also use corpora resources in a similar way for characterizing diverse groups belonging to various ethnicity, classes, races, creeds, etc.

For the media specialists corpora are indispensable test-beds for all kinds of text processing systems and software. We can guess that there may come a time when human authors are no longer the only source of readable texts, nor human readers the only users of it (Atkins et al. 1992: 3). At the moment, attention is concentrated on information retrieval (IR), text summarization (TS) and speech processing (SP). IR systems include mechanisms for extracting appropriate information from corpora and use them for building up knowledge bases, TS systems find information in items for indices and summarize the important content of the texts, while SP systems benefit more and more from the development and analysis of speech corpora. The spoken corpora[5] with all kinds of prosodic annotations are increasingly used for developing speech processors (McEnery and Wilson 1996:55).

The computational linguists are integrating their works with the data obtained from corpora-based studies. For them the statistical regularities found in corpora work as a key to analyzing and processing a language. Corpora are used by them as main data source as well as knowledge-bases for testing the presence or absence of regularities in language. However, recent studies (Atkins et al. 1992: 14) suggest that statistical techniques gain much in effectiveness when they act on the output of grammatically analyzed corpora.

For theoretical linguists, corpora can act as a mass representation of the facts of a language. For them corpora can yield data on the relative frequency of phenomena of all kinds and can also provide scopes for verification of the evidence of their own or of their informants.

In sum, two types of corpus users can be discerned: (i) language users who visualize corpora as a large diluted source of data that can be used as a yard-stick for any kind of linguistic and non-linguistic verification and analysis, and (ii) language appliers who can consider corpora as test-beds, composed of representative materials and good for testing or training automatic devices.

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[5] Spoken corpora (The Lancaster/IBM Spoken English Corpus, The Corpus of Spoken Professional American English, etc.) are basically a kind of technical extension of speech corpora which contain speeches in transcript forms, and if possible, carry different annotations.

4. Use Of Corpora In Various Branches Of Linguistics

Corpora are important sources of data for a number of areas within the wide scope of linguistics. Methodical analysis of language use, captured in corpora, provides an important complementary perspective to traditional linguistic descriptions (Biber 1996: 173). Moreover, the data-base leads us for appropriate retrieval and exploitation of relevant information in many linguistic studies, not only in lexicography but in grammar, semantics, pragmatics, sociolinguistics and in discourse analysis also (Leech and Fligelstone 1992: 129). As it is not possible to describe all applications of corpora in various branches of linguistics in details, in this paper we try to discuss only a few research areas in brief.

The area of *computational linguistics* (CL) is a new branch of applied linguistics which mostly depends on data-bases and new findings from the corpora. Here corpora contribute to the understanding of the special properties of language as well as provide theories and descriptions of language structure and use. Researchers and systems developers of CL uses language data from corpora to build various computational tools like frequency counting systems, item-search engine, text summarization system, annotation devices, information retrieval systems, automatic translation systems, question-answering systems, etc., which may help machines to access and utilize language as human does. Basically, these systems aim at emulating human linguistic performance that involves language understanding and generation. Since emulating human linguistic capabilities is a difficult task for machines, researchers of CL can at best think of designing specific linguistic modules by using linguistic knowledge that explains how each linguistic property contributes to language understanding and production. Thus with large amount of language-data these systems can perform some useful tasks which can help us in various ways mentioned above.

The availability of comparable corpora has made it possible to compare the language use in different states and countries for determining the *cultural differences* between respective language users. Comparative studies on the vocabulary of *the Lancaster-Oslo-Bergen (LOB) Corpus of British English*, and *the Brown Corpus of American English* have revealed many interesting differences which have gone beyond simple linguistic observations such as spelling or morphology (Hofland and Johansson 1982). Similarly, many interesting differences in the culture of language users have been noted in a comparative study among *the Kolhapur Corpus of Indian English (KCIE), the LOB Corpus of British English*, and *the Brown Corpus of American English* (Shastri 1988). In another study on *the LOB Corpus* and *the Brown Corpus*, it has been observed that words related to travel, crime and the military are more frequent in *the Brown Corpus* than in *the LOB Corpus* which possibly points to the larger size of USA, and its so called 'gun culture' (Leech and Fallon 1992). We assume that such interesting findings and nature-revealing researches would become more fruitful and relevant in future after the compilation and analysis of the *International Corpus of English (ICE)* that is supposed to include corpora of different varieties of English used across the world.

Corpora are quite frequently use for *grammatical* (or syntactic) as well as for *lexical* studies of a natural language because (i) they are good for representative quantification of the whole language variety, and (ii) they always play the role of an empirical database for testing hypotheses derived from grammatical theories. Usually, research on grammar and syntax is carried out based on the investigator's intuition about the language, rather than on the performance of the language users. The availability of large corpora has made it possible to study the language as it is actually used by the people in their daily course. This approach is supported by Aarts (1991: 45) who argues "*every (formal) grammar is initially written on the basis of intuitive data; by confronting the grammar with unrestricted corpus data it can be tested on its correctness and its completeness*". To test formal grammatical descriptions devised on the basis of the investigator's introspection and on existing grammars of the language, we can run them through corpora, representing a real-life language, to find out how far they account for the data. If required, we can modify the grammars to account for the situations which are either missing or found wrong. Besides, many small-scale studies on grammar such as clause type analysis or phrase type analysis can be initiated with the help of large corpora as done in English by Oostdijk and Haan (1994), Mindt (1995) and others.

Large diachronic corpora have found their utility in *historical linguistics* where diachronic research is conducted faster and more efficiently with representative corpora of the language at different points in history. The texts of historical periods form a kind of closed corpora[6], the data of which can only be extended by the discovery of previously unknown documents in the form of manuscripts or books. Thus, historical corpora, covering a range of genres, regional varieties and sociolinguistics variables (e.g., gender, age, education, social class, etc.) can be used for the purpose of both synchronic and diachronic research within or across languages. Moreover, historical corpora can be a good resource for the study of the evolution of language through time (Peitsara 1993).

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[6] Closed corpora are built on the text-data collected form particular time-span. The historical corpora are by nature a kind of closed corpora because they have little scope for regular augmentation after they have reached at their optimum level of saturation with incorporation of all available data. They however, can be augmented if only new historical data is found or retrieved.

Corpora are now accepted as reliable data-base for *language teaching* and acquisition as well as for improving the linguistic skills of the language users. Examples compiled from corpora are important in language learning as they expose students to the kinds of sentences they will encounter when using language in real life situations. Apart from being a source of empirical data corpora can be used to evaluate existing language teaching materials also. It is argued (Botley, McEnery and Wilson 2000) that there are considerable differences between what textbooks are teaching and how native speakers actually use language. The general opinion is that intution based teaching materials can be misleading since they contain intentionally invented examples which generally overlook important aspects of usage, or foreground less frequent stylistic choices at the expense of more common ones. But teaching materials should be explicitly empirical including examples and descriptions from corpora or other sources of real life language data so that more common choices of usage are given more attention than those which are less common.

Corpora are also used in *computer-assisted language learning.* McEnery, Baker and Wilson (1995), Barlow (2000) and others have reported how their corpora-based approaches are more effective in teaching language learners about proper identification of actual categories of lexical items used in texts, identification of proper contextual uses of various lexical items belonging to different parts-of-speech, understanding the appropriate use of terms depending on the context or topic of the texts, etc., than traditional lecturer-based methods. They have also reported how their computer-taught students performed far better than human-taught students. Also, their corpora-based and computer-assisted language teaching to the undergraduates have produced much better results than intuition-controlled classroom teaching (McEnery and Wilson 1996: 105).

Corpora have long been recognized as valuable sources for comparison and description of *language variations.* Following some sampling procedures, corpora can be developed to maximize the degree of comparability among the concerned languages. For example, both *the LOB Corpus* and *the Brown Corpus* contain texts representing similar genres, sample size and year of publication to enhance synchronic comparative study. Thus, they are used to study how language varies according to different text types, genres, domains, periods, regions, speakers, writers, contexts, etc. These 'variants' can either be different parts of one corpus (e.g., science fiction texts vs. romantic fiction texts), or similar parts of different corpora (e.g., science fiction texts in *the LOB Corpus* vs. science fiction texts in *the Brown Corpus*). Such comparable corpora can also be used as test-beds for theory making for language variation. For instance, a comparative study on the lexis and grammars of *the Kolhapur Corpus of Indian English* with *the Brown Corpus* *of American English,* and *the LOB Corpus of British English* (Leitner, 1991) has proved the 'common core hypothesis'[7] of Quirk et al. (1985) to be reliable.

Corpora can be used to study the *dialectal change* of a language within a particular geographical area. Dialectology is assumingly an empirical field which generally concentrates on experiment and controlled sampling of data rather than using elaborate corpora. Such studies tend to focus on vocabulary and pronunciation, neglecting other aspects of linguistics such as morphology, syntax, semantics, etc. Here lies the importance of dialect corpora which can allow these aspects to be studied, and if these corpora are sampled to be accurately representative then both quantitative as well as qualitative conclusion can be made about the target population as a whole. For example, *the Helsinki Corpus of English Dialects,* containing dialects from several English speaking regions and *the Northern Ireland Transcribed Corpus of Speech,* containing texts of spontaneous conversations of the field-workers, are used with *the LOB Corpus* and *the London-Lund Corpus* to examine the degree of similarity and difference of dialects as compared with standard varieties of English (McEnery and Wilson 1996:110).

Long before the birth of corpus linguistics, empirical data had been utilized in *lexicography.* Samuel Johnson used examples from literature to illustrate his dictionary (1755), while the *Oxford English Dictionary* used citation slips to study and illustrate the usage of words in English. Today, corpora are used as authentic sources for dictionary preparation as it is understood that open-ended corpora can play an important role in dictionary building since they enable the lexicographers to find new words entering the language, existing words changing their meanings, or balancing their use according to genre, etc. In 1995, we come across the publication of four major monolingual English dictionaries which are entirely based on analysis of large text corpora[8]. Similarly, small finite corpora are also used in lexical studies, particularly in the area of quantification, as they help to rapidly produce reliable frequency counts, and to sub-divide the areas across various dimensions according to the varieties of language in which words are used. Linguists having access to corpora can easily call up all the examples of particular words from corpora of million words. Moreover, they can produce and revise dictionaries more easily and quickly than before, giving a up-to-date information about any change or loss of any word in the language.

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[7] Common Core Hypothesis (CCH) is a theory proposed by Quirk et al. (1985) which has assumed that all varieties of English in the world have certain central fundamental properties in common which may differ quantitatively rather than qualitatively.

[8] The dictionaries are: Longman Dictionary of Contemporary English (3rd Edn.), Oxford Advanced Learner's Dictionary (5th Edn.), Collins Cobuild English Dictionary (2nd Edn.) and Cambridge International English Dictionary (3rd Edn.). For details, see Rundell (1996).

Also, by examining a larger number of examples in corpora, they can present more complete and precise definitions of various linguistic items.

To register benefits of corpora in lexicography Atkins and Levin (1995) have demonstrated how sufficiently large and representative corpora can either supplement or refute lexicographer's intuitions. Similarly, Ooi (1997) has shown how corpora can be effectively used in multiple ways for developing lexicons of language. Investigators can easily tie up usages of particular words or phrases as being typical to particular regional varieties, genres, and so on, by examining corpora rich with textual and extra-textual information (e.g., regional variety, author, date, genre, part-of-speech tags, etc.). Examples extracted from corpora can be arranged into more meaningful groups for analysis, individual words can be classified according to different research parameters, word combinations can be isolated to explore the existence of any inherent mutual relationship which warrants their co-occurrence, etc. All these enables investigators to treat phrases and collocations more systematically because phrases and collocations can provide important clues to specific word sense.

Systematically sampled corpora can be used as data-source from which materials for laboratory experiments for *psycholinguistics* can also be developed. Biber (1996) has shown how the frequency of lexical items is an important consideration in a number of cognitive processes including wordform recognition and understanding. Here, corpora can provide reliable information about the frequency of use of different lexical items in language for making hypotheses about their method of processing in mind. Moreover, speech corpora are generally recommended for the examination of the occurrence of speech errors in natural conversation. We know that after studying *the London-Lund Speech Corpus* for speech errors in natural conversation, Garnham et al. (1981) are able to classify and count the frequencies of different error types as well as able to provide some estimate on the general frequency of these in relation to speakers' overall linguistic output.

Special kind of speech corpora are generally used for analyzing linguistic disorders in *language pathology*. For this, an accurate set of abnormal speech data has to be developed to test and hypothesize what may be wrong with the human language processing system. Although some limited work have been done with a few sample speech corpora, the potential importance for such analysis cannot ignored. At present the study of the language of the linguistically impaired people lack quantified representative descriptions as well as proper methods for any generalized conclusion. However, McEnery and Wilson (1996: 112) have reported us that *the CHILDES Database* of Pennsylvania State University, USA, containing a large amount of language data collected form both linguistically impaired and normal children, has been analyzed empirically to understand the underlying problems in the area, to study the pattern of linguistic impairments, and to explore what might be the factors behind such linguistic impairments.

Corpora-based language study has contributed towards the establishment of an objective approach to the *semantic study* of linguistic items and text segments. It holds the view that the actual meaning of lexical items (or any text segment) can only be derived from the contexts in which they occur. Also, the meaning of lexical items or text segments comprises the history of their previous occurrences which include everything that has been said there about their meaning and about the meaning of the parts they are composed of. In semantics, the meaning of terms are quite frequently described by reference to the linguist's own intuitions. However, Mindt (1991) has demonstrated how corpora can be used to provide objective criteria for assigning meaning to the linguistic terms. He has argued that semantic distinctions are associated in texts with morphological, syntactic, prosodic, idiomatic or/and similar such characteristically observable contexts. Therefore, compounds, multi-word units, collocations and set phrases deserve contextual information for their proper semantic analysis and understanding. Thus, by considering the environments of linguistic entities an empirical objective interpretation for particular semantic distinctions can be arrived at. Similarly, Teubert (2000) has shown us how the finer shades of meaning (semantic shades, denotative, conceptual and pragmatic meaning, semantic features, etc.) can be extracted from contexts, condensed and paraphrased into texts that describe meaning of lexical items or text segments.

The study of sense variation of lexical items used in corpora has helped semanticists to establish more firmly the notion of fuzzy categories (indeterminacy) and semantic gradience in the field of lexical semantics (Cruse, 1986), and generative lexicon (pustejovsky, 1991). In theoretical linguistics, the categories of lexical items are usually constant where an item either belongs to a particular lexical category or it does not. But corpora evidence have helped the psychological work on categorization to suggest that cognitive categories are usually not 'constant' but have fuzzy boundaries. On looking empirically at corpora, it becomes clear that this 'fuzzy' model accounts better for the data as clear-cut boundaries do not exist for the lexical items.

Scholars now appreciate the value of corpora in *word sense disambiguation* (WSD) as well as in extracting actual contextual sense of words form their multiple senses (technically known as polysemy). It is now almost certain that the context of words can provide much more information that might not be available from the words if isolated from their contexts of occurrence. Such contextual information can perform an important role in word sense disambiguation as well as in their actual sense extraction. Long before the introduction of corpora in word sense disambiguation, Firth (1957) was probably the first scholar to make such a proverbial comment that 'the meaning of a word can be known by the company it keeps' (1957: 21). Let us hope that application of corpora in WSD will enable researchers to become more empirical and objective in their approach towards exploring multi-semanticity of lexical items and obtaining actual implied sense form the score of multiple senses. Probably, this will make the study of semantics more challenging both in theoretical and applied levels.

The regular standard dictionaries fail to capture *polysemous* (varied metaphorical and related senses of words) sense of words as found in corpora. Fillmore and Atkins (2000: 91-110), with examples obtained from dictionaries compiled manually, and dictionaries compiled from corpora, have shown that the number of sense distinctions of a particular lexical item that show up in corpora far exceeds the number of sense distinctions that are provided in dictionaries. This has led them to argue that polysemy of words can be rightly accessed if its investigation includes corpora-based lexicography along with other relevant combinational properties of the lexical items. Such factor analysis approach might be fruitful for capturing multiple semantic senses of words in monolingual corpora as well as for sense identification and matching for translation-equivalents among bilingual corpora.

One of the important research areas in *social psychology* is to understand how and why people attempt to explain things. An analysis of the explanations (or attributions) can probably reveal the ways in which people regard their environment. Such studies require access to naturalistic data not reproduced in laboratory conditions. Moreover, for quantifying instances, testing theories and studying explanations, naturally occurring corpora texts such as newspapers, diaries, company reports, everyday speeches of human interaction, etc., are essential. The work of Antaki and Naji (1987) has revealed the potential utility of corpora to test and modify theory in subjects which require naturalistic quantifiable language data. By analyzing sample sets, they have designed a classification scheme which is used to classify all the explanations according to the 'actions of speakers', 'general states of affairs', etc. Also, a frequency analysis of the explanation types in corpora have showed that explanations of general states of affairs are the most common type of explanation, followed by actions of the speaker and actions of others. Their study has thus refuted the theory that the prototypical explanation is the actual explanation of a person's single action.

The majority of *sociolinguistics* researches usually rely on the collection of research-specific data which is rarely put to any quantitative study or sampling because majority of studies in sociolinguistics are concerned with lexical items in the area of language and gender. Language corpora can provide representative samples of naturalistic data which can be used in both kinds of investigation.

Therefore, corpora with multi-dimensional sociolinguistic information are highly useful for varieties of sociolinguistic researches. For instance, while examining the masculine bias in American and British English in *the Brown Corpus* and *the LOB Corpus,* Kjellmer (1986) has noted that the frequency of the female items is much lower than the male items in both the corpora, though the occurrence of female items is much more in British English than in American English. The observation may have a hidden implication to hint to the lower status of the fair sex even in those so-called advanced societies where woman members are claimed to have equal status like their counterparts. Similarly, Rayson and Hodges (1997) have studied a number of sociolinguistic factors (language users' age, sex, social class, domicile, etc.) in *the British National Corpus,* while Stenstrom and Hasund (1996) have studied variations in the verbal disputes of adolescent females in *the Corpus of London Teenagers* to come out with some surprising results.

For studying *speech* as a variety of natural language, spoken corpora as opposed to written corpora, are of great value. Speech corpora can be used as reliable data-bases for studying speech patterns of the speakers coming from different walks of life. Such study is sure to produce results which can virtually differ from the results obtained from the analysis of written corpora (McEnery and Wilson, 1996, Kennedy 1998). Speech corpora can also be used for teaching computers to produce, understand, recognize, process and synthesize speeches. The study of acoustic and phonetic aspects of actual speech data is important in the areas of telecommunication, voice-mail systems, etc. Speech corpora are important for research in speech technology because they provide:

(i) broad representative samples of speech extending over a wide selection of variables (e.g., speaker's gender, age, class, etc.). Such corpora can capture both generalizations about spoken language as well as variations within a given spoken language,

(ii) samples of naturalistic speech rather than speech developed under artificial conditions. The findings from corpora are, therefore, more likely to reflect language as it is spoken in real life situations and

(iii) phonetically and prosodically annotated data-bases which are far more suitable for carrying out large scale quantitative analysis than fresh raw data.

Despite such fine utilities only a few speech corpora are developed because producing speech corpora with text annotation is a time-consuming, labor-intensive, and costly affair.

Language corpora with genre and register variations have opened up many new possibilities of research in *stylistics.* Researchers can now access texts with specific features of certain text types in place of general varieties of language. Because of their comparability and referenciality, corpora are now good sources for investigating different text or genre types within monolinguistic environments for authorship attribution and for investigating changes of styles. In order to define an author's particular style, one can examine the degree to which the author leans towards different ways of putting things (technical vs. non-technical vocabulary, long vs. short sentences, formal vs. informal manner of narration, etc.). Such tasks require comparison of the author's own works, as well as comparison with works of other authors, with the norms and variety of the language as a whole. We know corpora have been reliable data-bases for the study on text types (Stubbs 1996), as well as for authorship attribution following particular styles of certain authors (de Haan 1997).

The use of language corpora in *discourse analysis* is gaining ground slowly as it is difficult to find material suitable for such research, because the samples of texts used in corpora are somewhat removed from their social and temporal contexts which are of paramount importance in discourse analysis. To make up this loss, corpora are sometimes encoded with relevant social information (gender, class, region, etc.) but it is still not always possible to infer contexts from corpora texts. Using *The London-Lund Speech Corpus*, Stenstrom and Andersen (1996) and Anderson (1997) have carried out some researches to understand how conversation works with respect to lexical items and phrases that have conversational functions. We can expect that more corpora will be compiled and annotated with relevant information that will trigger more corpora-based discourse research. The availability of conversational corpora and the increase of recorded data of social/geographical range of people will provide greater incentive to extend studies on discourse.

5. Conclusion

For the last 30 years language corpora are considered as basic resources for language analysis and research. This reflects both ideological (a major shift towards empirical study of language from intuitive or rationalistic assumptions) and technological (impressive processing power and massive storage ability of computers) change in the area of language research. This change of attitude is probably caused due to the introduction of computer and corpora in linguistic research which, as a result, have paved out many new applications of language (and linguistics) in the fields of communication and information exchange. Moreover, the empirical approach to language study has been identified to be more reliable and authentic than rationalistic (based on intuition) approaches.

In the 1960s and the 1970s, the pioneers of corpus linguistics had to fight a mismatched battle against the overwhelming Chomskyan group, because the empirical approach of corpus linguistics was strongly challenged and ridiculed by the rationalist linguistic mainstream (McEnery and Wilson 1996: 36). Now, the scenario is greatly changed. The question of using language corpora in language study is now a settled issue. The present praise for corpora is evoked from the visualization of its many possible potential uses for producing sophisticated automatic tools and systems. Besides, in case of theory making and language description, scholars are using language corpora to such an extent that the idea of attempting to describe a language without reference to empirical data-base is now regarded non-reliable and ludicrous.

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ONOMATOPOEIA IN BENGALI IN COMPARISON WITH ORIYA AND HINDI

ALIBHA DAKSHI
Vishwa Bharati, Santiniketan

Abstract

This paper attempts to present a comprehensive account of onomatopoeia or symbolic forms in three Indian languages, namely, Bengali, Oriya and Hindi. Symbolic forms are very special in nature and powerful in character to illustrate the meanings more accurately and appropriately than ordinary speech-forms. Onomatopoeic forms are especially imitative intense forms which denote sounds as symbols of natural phenomena or actions and also express the physical and mental feeling of pain, joy, agony, hatred, intensity, excessiveness, sense of diminution, largeness and, so on. For instance, the Bengali word **jhirjhir**, *Oriya* **jhirijhiri** *and Hindi* **rimjhim** *indicate 'drizzling'; similarly Bengali* **jhamjham**, *Oriya* **jharjhar** *and Hindi* **jhamjham** *express 'heavy rain'. The symbolic forms, which are quite widely distributed, are the repetition of forms with same phonetic feature. Such repetitive forms cannot be separated simply because they cannot form words singly. However, it is important to note that there are some instances where a single component is used as a word, may be with different meaning, such as, Bengali* **catcaṭ** *'sticky' and* **caṭ** *'quickly';* **ṭapṭap** *'falling drops continuously' and* **ṭap** *'falling drop' or 'immediately' and, so on. In Oriya* **rak** *means 'suddenly in a squeaking manner' and* **rakrak** *means 'a croaking or cracking sound or sensation experienced when a bone joint is dislocated'. In Hindi* **lap** *means 'movement, flexibility' and* **laplap** *means 'throbbing palpitation'. Here attention has been given to the description of evidence available on the basis of data that, in fact, yield to comparative treatment.*

Definition

The term onomatopoeia means "formation and use of words to imitate sounds. For example: dong, crackle, moo, pop, whizz, whoosh, zoom. It is a figure of speech in which the sound reflects sense."[1] Onomatopoeia or "symbolic forms have a connotation of somehow illustrating the meaning more immediately than do ordinary speech -

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[1] The Penguin Dictionary of Literary Terms and Literary Theory, J.A. Cuddon. Fourth edition, 1999, p. 614.

forms".[2] Onomatopoeic forms are especially imitative intense forms which denote sounds as symbols of natural phenomena or actions and also express the physical or mental feeling of pain, joy, agony, hatred, intensity, excessiveness, sense of diminution, largeness, and so on. "These are imitative or onomatopoetic intense forms, which denote a sound or an object which gives out a sound: the imitative speech-form resembles this sound: *cock-a-doodle-doo, meeow, moo, baa*".[3] For instance, the Bengali words *jhirjhir*, Oriya *jhirijhiri* and Hindi *rimjhim* indicate 'drizzling', Oriya *jharjhar*, Bengali *jhamjham* and Hindi *jhamjham* express 'heavy rain'. These are imitative symbolic forms, or onomatopoeia referring to rain. Likewise, in Bengali, the word *chalchal* expresses 'tearful eyes' cf. Oriya *chalchal* expresses the same; both carry the meaning of outward expression of agony, pain, sorrow, and so on. In Hindi *chalchal* expresses the 'sound of splashing, rippling or overflowing of water'. The fundamental relationship between these words and their meanings is that the words are imitative of the things they name. This kind of relationship between the sound in a word and its meaning is called 'sound symbolism'. As defined by David Crystal, sound symbolism is "a direct association between the form and the meaning of language, as when phonetic sounds reflect sounds in the external world- onomatopoeia, as in *cuckoo, murmur, splash-* or other properties, such as, size or light: this is phonesthetics, as in glitter, slimy, swerve".[4] These forms are very special in nature and powerful in character to illustrate the meanings more accurately and appropriately than ordinary speech-forms.

Observations

It is believed that the onomatopoeic words in a language can illustrate subtle meanings more accurately and intensely than the meanings of ordinary speech forms. Symbolic forms, which are quite prevalent in Bengali, Oriya and Hindi, are comprised of repeated phonetic elements, which are quite similar. Onomatopoeic forms are indigenous in character. These forms referring to objects and ideas in relation to different collocations differ from language to language. In Bengali and Oriya the word *kilbil* refers to the animate beings, which move in a zigzag way, as in Bengali *pukure māch kilbil karche*, cf. Oriya *pokharire mācha sabu kilbil heuchanti* 'the fish are darting in a zigzag way in a pond'. The same word cannot be used in Hindi. The word *bilbilā* is used to mean the same thing e.g. *khet mẽ kiṛe bilbilā rahe haĩ* worms are moving in a zigzag way in the field'. It is observed that in many cases we may not find out exact cognate words in Oriya and Hindi corresponding to Bengali and vice versa. On the other hand, the same word

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2. Leonard Bloomfield, Language. First edition, 1935, Reprint, Delhi, 1980, p. 135.

3. Ibid., p. 135.

4. David Crystal, Glossary: International Encyclopedia of Linguistics, edited by William Bright, Vol. 4, Oxford University Press, New York, 1992, p. 337.

can be used in different languages to mean not the same, but different objects and ideas, such as, in Bengali the word *kankan* means 'to shiver with cold' or 'to ache' whereas in Oriya it means 'perturbed vision'. *kankana* in Hindi indicates 'crisp, thrilling, piercing'. The word *ṭanṭan* reflects the meaning of acute pain in Bengali and Oriya, but in Hindi, it means 'ringing of the bell'. The word *pilpil* in Bengali reflects the meaning 'row of animate beings moving not in a straight line', but in Hindi it means'over-ripen'.

In some cases, there are certain variables with typical sound patterns providing various shades of meanings. For example, we find in Bengali the word *cakmak* 'glittering' / 'sparking colourfully', differs from the word *cakcak* expressing 'brightness', in that *cakmak* refers to an object of gorgeous or multiple colours sparkling brightly, whereas *cakcak* refers to brightness only having no relation to colour. Thus in repetition the sound */m/* suggests multi-colouredness. Like this case, normally in the formation of variables the bilabial sounds e.g. */p/, /ph/, /b/* and */m/* are inserted. In Bengali and Oriya, *kaṛmaṛ* denotes 'chewing sound of hard or raw fruit', 'gritting sound of teeth out of anger' e.g. *cheleṭi cholābhājā kaṛmaṛ kare khācche* 'the boy is munching the roaster grams'. In Oriya *carama krodhare danta kaṛamaṛa karuchi* 'he is gnashing out of intense anger'. In Hindi *kaṛmaṛ* means 'a grating or cracking (as of a dog gnawing a bone) e.g. *kuttā hāḍḍi ko baṛe cāv se kaṛmaṛ karke khāne lagā* 'the dog is gnawing a bone'. In Oriya, along with bilabial series, */c/* is also used in the second part of the form, such as, *dhakcak* which expresses movement of a vehicle on uneven road. In Bengali, Oriya and Hindi the insertion of */jh/* sound is also noticed, e.g. *rimjhim* 'falling of rain', *rumujhumu* 'jingling' sound of a dancer's anklets', etc. In Hindi the word *ḍagmag* 'to stagger' is used in collocation with various movements - that of vehicles, human beings and, so on.

We have in out languages some repetitive and echo words whose forms often get confused with onomatopoeia, though in reality they are not so. Onomatopoeic forms are autonomous in character. The individual components cannot be used in isolation to form words by themselves. However, it is important to note that there are some instances where a single component is also used as a word, may be with different meaning, such as, *caṭcaṭ* 'sticky' and *caṭ* 'quickly'; *ṭapṭap* 'falling drops continuously' and *ṭap* 'falling a drop' / 'immediately'; *paṭpaṭ* 'sound of breaking glass bangles or plastic materials' and *paṭ* 'breaking down easily at once' and, so on. In Oriya, *rak* means 'suddenly in a squeaking manner' and *rakrak* means 'a croaking or cracking sound or sensation experienced when a bone joint is dislocated'. In Hindi *lap* indicates 'movement, flexibility' and *laplap* denotes 'throbbing palpitation'.

There are quite a large number of onomatopoeic words, which are derived from Sanskrit, and in the process of development have lost their original phonemic feature and became *tadbhava* words. For instance, in Bengali *dhabdhab*, which has been originated from the Sanskrit word *dhavala* means 'white'. Similarly, Bengali and Oriya *cikcik* 'glittering' perhaps has developed from the Sanskrit *cikkana*. In Bengali, Oriya and Hindi the word *gungun* 'buzzing' seems to have been developed from the Sanskrit *cikkana.* In Bengali, Oriya and Hindi the word *gungun* 'buzzing' seems to have been developed from the Sanskrit *guñjana*. Rabindranath Tagore has categorically mentioned, "Onomatopoeic words are not all derived from well-defined Sanskrit roots, but are only self-expressive sound symbols".[5] Since these words, though derived from Sanskrit, are considered to be *tadbhava* words, they should not be excluded from the study of onomatopoeia.

Moreover, there are words of similar type designated as repetitive (*śabdadvaita / dvaitaśabda*) words e.g. Bengali *jvaljval* 'shining'; Bengali *jvarjvar* 'feverishness' cf. Oriya *jvara jvara*; in Hindi *thithur thithur* 'shivering', *sihar sihar)* 'horripilation'. These are being excluded from the present study. In the case of the above repetitive words each component expresses a certain meaning, whereas in onomatopoeic words the repetitive component cannot be isolated as a separate word, except in a few instances where they are used both in repetition and also in isolation as already discussed.

Symbolic forms or onomatopoeic words, which have semantic connotations illustrating the meaning more accurately, differ from one language to other. Onomatopoeic words are language dependent. They bear no universal validity in respect of coherence between sounds and meanings referred to. Therefore, observations and classifications are made keeping in view of four major dimensions.

i) Most of the onomatopoeic words in three languages denote more or less similar meanings though there may be a few instances which provide semantic diffusion to some extent. For instance, Bengali, *kaṛkaṛ* signifies 'a loud rumbling noise as of a clap of thunder', 'gritting sound of teeth', in Oriya *kaṛkaṛ* means 'gritting sound of teeth with anger', 'boiling sound of oil over fire' comparing Hindi *kaṛkaṛ* expresses 'crackling or crunching sound'. It is observed that the semantic interpretations of the word *kaṛkaṛ* in three languages are related to each other, but refer to different objects and sources. This sort of feature shows the existence of inequality or differences in respect of socio-cultural activities in three speech communities. Other examples are viz. Bengali *ciṭciṭ* means 'viscosity', 'adhesive', cf. (O) and (H) *ciṭciṭ* expresses 'viscous', 'sticky'; Bengali and Oriya *caṭpaṭ* means 'quickly', in Hindi this also means 'quickly' or 'instantly';

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[5] Rabindranath Tagore, Sabdatattva, Rabindra Racanavali Janmasatabarsik Samskaran, fourteenth volume, B.S. 1368.

Bengali and Oriya *cakcak* expresses 'brightness' cf. Hindi *cakcaka* signifies 'shining'.

ii) It is often found that there are some Bengali onomatopoeic words which express almost similar meanings corresponding to Oriya words, but in Hindi they differ to large extent, e.g. Bengali *kiṭkiṭ* means 'filthiness, dirtiness related to black colour', e.g. *kāpaṛṭā maẏlā kiṭkiṭ karche*; in Oriya *kiṭkiṭ* expresses 'bitter taste of food or darkness of night', 'deep black and red colour', e.g. *kiṭikiṭi andhāra, kaḷā kiṭkiṭi*, but in Hindi *kiṭkiṭ* suggests 'quarrelling', 'gnawing', e.g. *kyā kiṭkiṭ lagā rakhi hai*. In Bengali and Oriya *kackac* indicates 'the sound of munching or crunching repeatedly' whereas in Hindi *kackac* denotes 'grating sound', 'chatter'; in Bengali *gajgaj* means 'grumbling', in Oriya it means 'low grumbling' but in Hindi *gajgajānā* means 'to rattle', 'to buzz', 'to hum'.

iii) There are words of the same phonetic features in three languages, but reflect entirely distant meanings which have no mutual associations in terms of collocation, such as, Bengali *galgal* expresses 'the sound of quick pouring or coming out especially blood', in Oriya *gaḷagaḷa* means 'vomiting heavily' but in Hindi *galgal* suggests 'a gurgling or gulping sound'. Other examples viz. Bengali *kaṭkaṭ* expresses 'the sound of gnawing or cutting off something very hard either by teeth or knife', in Oriya *kaṭakaṭa* means 'a look that expresses anger or threat' cf. Hindi *kaṭkaṭ* expresses 'knocking together', 'chattering of teeth'; Bengali *karkaṛ* signifies 'the sound of rubbing or crushing', Oriya *karkar* means 'loud laughter' cf. Hindi *karkar* suggests 'to creak as of branches, to crackle, to sound harshly'.

iv) There are many words found in Bengali and in other two languages where no cognate words are available. For instance, Bengali *gā̃iguĩ* 'imaginary sound of indirect unwillingness', *ghyānghyān* 'repeated whining', Oriya *ginigini* 'uttering nasal sound while speaking' *gupu* 'buzzing of bee', Hindi *guṭ* 'cooing of pigeon' *ghispis* 'close contact', etc.

It is often found there are words in source language which express more than one meaning and the cognate words of the corresponding languages often match any one out of the variations. It is also observed that many onomatopoeic words, which are found in old literatures, but have been lost in recent time or there are some instances, which show semantic diffusion or change in course of time. On the other hand, many new forms also emerge or come to existence. As described by Jack Rosenthal in 'Moscow News Weekly', "In short, people around the world form sound, words depending on how they see, hear or experience the world. Their symbols can be every bit as different as their different perceptions of their different cultures."[6] Therefore, here the analysis will be made keeping in view of three major dimensions. Firstly, onomatopoeia will be divided from the point of view of phonological formations. Secondly, so far as morphology is concerned they can be used either as adjectives, adverbs or verbs and sometimes nouns also. Thirdly, from the semantic point of view such words entail different shades of meaning depending on different socio-cultural interactions.

Phonological formations

On the basis of phonological formations onomatopoeic words in Bengali can be divided into four main groups:

1. **Reduplication** i.e., the total repetition of the base morpheme, e.g. Bengali (=henceforth B) *khaṭkhaṭ* cf. Oriya (=henceforth O) *khaṭkhaṭ* 'knocking at the door'/'feeling of dryness'; cf. Hindi (=henceforth H) *khaṭkhaṭ* 'knocking sound';

   (B) *gungun* cf. (O) *guṇuguṇu* (H) *gungun* 'humming/buzzing'; (B) *bhyā̃bhyā̃* cf. (O) *bhẽbhẽ* children's cry'.

i) cvcv: (B) *khā̃khā̃* cf. (O) *khākhā* 'emptiness'(O) *khẽkhẽ* (H) *khōkhō* 'the sound of a cough'; (O) *gẽgẽ* 'not saying distinctly', (H) *gẽgẽ* 'the call of a bird'; (B)(O) *gōgō* 'groaning sound'

ii) cvvcvv: (B) *dāudāu* cf. (O) *dāudāu* 'fiercely burning fire', (B) *dheidhei* cf. (O) *dheidhei* 'dancing wildly'; (B) *pā̃ipā̃i* cf. (O) *pā̃ipā̃i* 'running away fast'; (B) *sā̃isā̃i cf. (O) sā̃isā̃i 'sound of a gust of wind'; (B) piupiu* 'the note or cooing of the nightingale'; (H) *piupiu* 'cooing'

iii) cvccvc: (B)*cakcak* cf. (O) *cakcak* 'glittering, brightness' cf. (H) *cakcaka* 'glittering, brightness'; (B) *chalchal* cf. (O) *chaḷchaḷ* 'tearful eyes'; cf. (H) *chalchal* 'the sound of splashing, rippling or overflowing'; (B) *jhamjham* 'a loud jingling sound of anklets', 'heavy rain, cf. (H) *jhamjham* 'sparkle, gleam, pattering'; (B) *laplap* old usage; presently out of use 'hopping' cf. (O) *laplap* 'smacking sound made by the tongue while eating or licking' cf. (H) *laplap* 'throbbing paplitation'.

iv) cvccv(a)c: (B) *dumdām* cf. (O) *dumdām* 'repeated booming noise'; cf. (H) *dumdum*; (B) *saṭāsaṭ* 'quickness' cf. (H) *saṭāsaṭ* 'striking, succession of blows'; (H) *sarāsar* 'whizz'.

v) cvcvc cvcvc: (B) *kacarkacar* 'aimless chatter or quarrelling' cf. (O) *kacarakacara* 'irritation', the munching sound of raw partly boiled food. cf. (H) *kacarakacara* 'the sound of something raw fruit'; (B), (O) *gajargajar* 'continuous grumbling' cf. (H) *gajarbajar* 'poor quality food'; (O) *caparcapar* 'pattering of rain for a long period' cf. (H) *caparcapar* 'the sound of eating or chewing'

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[6] Jack Rosenthal, Moscow New Weekly, International Herald Tribune, No. 38, 1985.

vi) cvcv cvcv : (B) *kicikici* ' chirping sound of birds'; (B) *guruguru* 'rumbling sound'; (B) *dhikidhiki* cf. (O) *dikidiki* 'smouldering' (especially for wood); (B) *duruduru* cf. (O) *duludulu* expressing 'tremor, or shivering (with fear)'.

vii) cvcvv cvcvv : (B) *tāthai tāthai* 'wildly stepping' (as in a war dance).

2. Partial Reduplication

i) cvcvc cvc : (B) *jhamar jham* 'jingling sound of anklets'; (B) *bhyā̃par bhyā̃p* 'sound of bugle'; (H) *kukṛuku*, 'the crow of a cock'.

ii) cvcvcvv cvv : (B) *tātāthai thai* 'rhythmic foot-stepping in dance'; (H) *tātāthei tātā thei*, 'symbolical sounds or words guiding the tandava dance'.

iii) cvv cvcvcvc : (B) *dhā̃i dhapādhap* 'wild beating of drums'.

3. Onomatopoeia in isolation

i) cv : (B) *cō* cf. (O) *cā* 'drinking any liquid in once sip'; (B) *chō* cf. (O) *chũ* 'picking up something suddenly'; (B) *dhā̃* cf. (O) *dhā̃i* 'moving forward quickly'

ii) cvv : (B) *dhā̃i* cf. (O) *dhā̃i* 'giving a sudden blow'; (B) *Pā̃i* cf. (O) *pā̃i* 'quickly'; (B) *sā̃i* cf. (O) *sā̃i* 'moving with great speed'.

iii) cvc : (B) *caṭ* cf. (O) *caṭ* 'quickly'; (B) *ṭhak* cf. (O) *ṭhak* 'rapping noise as of a stick on the floor'; (B) *paṭ* cf. (O) *paṭ* ' with a cracking or snapping noise'; (B) *maṭ* cf. (O) *maṭ* 'with a crackling sound'; (H) *gup* the feeling of desolate, (H) *phus* 'whisper, low sound of whisper'; (H) *dham* 'a loud sound'.

iv) cvcvc : (B) *dhapās* 'a loud thud or thump caused by the fall of a heavy body'; (B) *paṭāng* cf. (O) *paṭāng* 'sudden snapping (usually of a wire)'; (B) *phuṛut* cf. (O) *phurru* 'flying away suddenly (usually of birds)'; (B) *sapāng / sapāt* 'sound of canning, lashing'; (B) *suṛut* 'escaping away suddenly'.

4. Onomatopoeia with insertion of the vowel ā, bilabials and other sounds:

i) (B) *gapāgap* cf. (O) and (H) *gapāgap* 'swallowing or eating fast'; (B) *ṭapāṭap* cf. (O) *ṭapāṭap* 'doing anything rapidly (plucking of flowers, eating of food items etc.), rapidly falling of fruit or flowers; falling drops' (B) *paṭāpaṭ* cf. (O) *paṭāpaṭ* 'cracking noises in quick succession', cf. (H) *paṭāpaṭ* 'beating'.

ii) (B) *kaṛmaṛ* cf. (O) *kaṛmaṛ* ‘sound of munching or rumbling’; (H) *kaṛmaṛ* ‘grating or cracking continuously’; (B) *kilbil* ‘moving in a swarm in water (fish, worms)’; (B) *cikmik* cf. (O) *cikimiki* ‘glittering, glistening’; (B) *jhalmal* cf. (O) *jhalamala* ‘sparking’; (B) *ṭalmal* cf. (O) *ṭaḷamaḷa* ‘state of restlessness, trembling, imbalance movement’; (B) *rimjhim* cf. (O) *rimijhimi* ‘sound of a rain shower’; (B) *runujhunu* cf. (O) *runujhunu* ‘jingling sound of anklets’.

Morphological formations

Based on morphological formation onomatopoeic words can be classified into four main groups.

i) These can be used as adjectives. In Bengali adjectival forms are formed by the addition of *-e* to the word. For instance, (B) *kuckuc* > *kuckuce* expressing ‘deep bright black colour (hair)’; (B) *kyā̃ṭkyā̃t* > *kyā̃tkẽṭe* ‘gaudy or over-bright unpleasant colour’; (B) *miśmiś* > *miśmiśe* ‘darkness, or soot colour’ cf. (O) *kiṭkiṭ* > *kiṭkiṭiyā / kiṭmiṭiyā kaḷā* ‘deep black colour (complexion)’ (O) *chanchan* > *chanchaniyā sāga* ‘very fresh green leaves’; (B) *ṭalṭal* > *ṭalṭale* ‘very soft’; (B) *dhabdhab* > *dhabdhabe* ‘brilliantly white’. cf. (H) *kacākac* is used as adjective ‘bus’ *kacākac bhari hui thī*. ‘The bus is fully packed’; (H) *kaṛkaṛ* crackling or crunching *ex. chātipar caṛkar tumhāri hāḍḍiyā̃ kaṛkaṛa deṁge* ‘ I will sit on your chest to make your bone crack’.

ii) Onomatopoeic words are usually made into adverbs by the addition of the participial *‘kare’* in Bengali and *‘kari’* in Oriya. (B) *kulkul* > *kulkul kare* cf. (O) *kulukulu kari* ‘rivulet flowing with a babbling noise’; (B) *juljul* > *juljul kare* cf. (O) *julujulu kari* ‘staring with greedy eyes’; (B) *phyālphyāl* > *phyālphyāl kare* ‘with bewildererd eyes’; cf. (H) *kaṛmaṛ* grating or cracking sound. ex. *kuttā hāḍḍi ko baṛe cāv se kaṛmaṛ kar khāne lagā*, ‘the dog started chewing the bone with a cracking sound’. (H) *jhamājham* raining heavily and continuously, shining brightly e.g. *sīlā ke kapṛe jhamā jham camak rahe the*, ‘the clothes of Sila are shining brightly’.

iii) Onomatopoeic words are used as verbs in Bengali and Oriya. These are mostly compound verbs formed in combination with roots *kar* in Bengali and *he* in Oriya, but in Hindi onomatopoeic words are mostly used as verbs. For instance, (B) *ṭanṭan kar* expressing ‘a state of acute pain or throbbing pain (as in abscess)’ cf. (O) *ṭanaṭana he*; (B) *ṭalmal kar* expressing ‘a staggering gait’ cf. (O) *ṭalamala he*; (B) *ḍhis ḍhis kar* expressing ‘uneasiness from tiredness or illness’; (B) *pacpac kar* expressive of ‘a squishy sound, like while walking through mud’ cf. (O) *pacpac he*. (H) *gadbadānā* to *rejoice*, *gungunānā* to buzz, to hum, *jhaljhalānā* 'to glitter, to sparkle', *dhardharānā* 'to make a rattling or banging noise' etc.

iv) Onomatopoeic words are also used as nouns, e.g. (B) *khaṭkā* < *khaṭkhaṭ* 'a sudden doubt or suspicion' cf. (O) *khaṭkā*; (B) *jhumkā* < *jhumjhum* 'bell-shaped earring' cf. (O) (H) *jhumkā*, (B) *paṭkā* < *paṭpaṭ* 'cracker' cf. (O) *paṭkā*, (H) *phaṭākā* etc.

Semantic formations

From the semantic point of view such onomatopoeic words entail meanings of various kinds and can be grouped into two main divisions.

1. Imitative onomatopoeia and 2. Onomatopoeia expressing mental states, emotions, thoughts, ideas and so on.

1. Imitative onomatopoeic words are audible sound-symbols of natural phenomena or actions. Sometimes these can be used in single forms and sometimes in repetition. Imitative onomatopoeic words convey meaning as follows.

Natural phenomena

i) Rain/Water

(B) *kalkal / kulkul* cf. (O) *kulukulu* 'flowing of water'; cf. (H) *kalkal* 'a continuous indistinct noise' (B) *jhamjham, jharjhar* cf. (O) *jharjhar* (H) *jhamjham* 'falling of rain, tears or a water-fall'; (B) *jhirjhir* cf. (O) *jhirijhiri* 'drizzling'; cf. (H) *rimjhim*; (B) *ṭapṭap* cf. (O) and (H) *ṭapṭap* 'falling drops of water'; (B), (H) *ṭipṭip* cf. (O) *ṭipiṭipi* 'falling of light rain', (B) *tirtir* expression of 'flowing water in a narrow stream'; cf. (H) *tirtirānā* sound of dripping (B) *dardar* cf. (O) *dardar* 'profusely sweating or the streaming down of tears'; (B) *huṛhuṛ* expressive of 'the sound of a liquid being down or falling profusely'.

ii) Blowing of air

(B) *jhirjhir* cf. (H) *jhirjhir* cf. (O) *jhirijhiri* expressive of 'the sound of a breeze'; (B) *śanśan* 'noise caused by the speedy flight of wind'; (H) *sarsar* blowing of air (B) *sā̃sā̃ / sā̃isā̃i* cf. (O) *sā̃isā̃i* expressive of 'fizzing or hissing sound'; (B) *sõsõ* cf. (O) *sũsũ* 'whizzing sound'; cf. (H) *śanśan* 'whizzing sound' (B) *huhu* 'the blowing of gust of wind in an open space'.

iii) Thunder / Cloud

(B) *kaṛkaṛ* expressive of 'the crackle of thunder', *guṛguṛ* 'the rumbling sound of thunder', *guṛumguṛum* 'the booing sound of thunder' cf. (O) *ghaṛaghaṛa*, (H) *ghaṛghaṛ* 'rumbling thunder'.

iv) Calling of birds and animals

(B) *kākā* cf. (O) *kākā* 'cawing by crows' cf. (H) *kāykāy*, (B) *kickic* expressive of 'a squeaky sound by rats and small birds'; (B) *kicmic* / *kicimici* / *kicir micir* cf. (O) *kiciri miciri 'chirping sound of birds'; (B)* *kuu kuu* cf. (O) *kuku* 'sound of cooing by the cuckoo' (B) *kōkorkō* cf. (O) *kakkakaka* 'cock-a-doodle-doo'; cf. (H) *kukṛuku*; (B) *khyā̃k khyā̃k* expressive of 'yelping by dogs or jackals' cf. (H) *kheṁk kheṁk* 'snarling sound of fox', (B) *gā̃gā̃* / *gā̃kgā̃k* 'bellowing of a bull'; (B) *gōgō* 'howling of a tiger'; (B) *ghughu* 'sound of cooing'; (B) *gheugheu* / *bhaubhau* cf. (O) *bhobho* cf. (H) *bhaubhau* 'barking of dogs'; (B) *ghyāṃar ghyāṃar* cf. (O) *ke kaṭara* 'croak'; (B) *cĩcĩ* cf. (O) *cĩcĩ* / *cici* 'chirping of small birds'; (B) *cihĩcihĩ* 'neigh'; (B) *pōpō* cf. (O) *gũgũ* 'buzzing'; (B) *pyā̃kpyā̃k* 'quacking of duck'; (B) *phōs phōs* cf. (O) *phāphā* 'hissing sound'; (B) *bakambakam* cf. (O) *bakambakam* 'cooing of the pigeon' cf, (H) *guṭ* / *guṭurgu*; (B) *byābyā* cf. (O) *mẽmẽ* 'baa, bleat'; (B) *miumiu* cf. (O) *miāumiāu* (H) *myāumyāu* 'mew, purring'; (B) *hāmbāhāmbā* cf. (O) *hāmbā* 'mooing'; (B) *huphup* 'calling of monkeys'.

Imitative sounds relating to human activities

i) Sounds of laughter

(B) *khalkhal* 'laughing loudly'; (B) *khilkhil* cf. (O) *khilkhil* 'giggle' cf. (H) *khilkhilānā*; (B) *phik phik* cf. (O) *phik* 'smile'; (B) *hāhā* cf. (O) *hāhā* 'roaring laughter'; (H) *hāhā hāhā* 'to laugh loudly'; (B) *hihi* cf. (O) *hihi* 'roaring laughter' cf. (H) *hihi* gigling; (B) *hoho* cf. (O) *hoho* / *ṭhoṭha* 'laughter' cf. (H) *hoho* 'loud laughter'.

ii) Sounds of crying

(B) *ōāōā* cf. (O) *ũā̃uũā̃u* 'baby's cry'; (B) *ṭyā̃ṭyā̃* *'wailing of a baby'; cf. (H)* *ṭẽṭẽ* 'screeching cry'; (B) *pyā̃pyā̃* /*pyānpyān* 'whimpering'; (B) *phōsphōs* cf. (O) *saksak* 'sobbing'; cf. (H) *saksakānā* 'to tremble out of fear' (B) *phyāphyā* 'nagging (derogatory)' cf. (O) *phephe*; (B) *bhyā̃bhyā̃* cf. (O) *bhẽbhẽ* 'crying loudly'; (B) *hā̃uhā̃u*/*hā̃umā̃u* cf. (O) *hā̃uhā̃u*/*hẽhẽ* /*hā̃umā̃u* expressive of 'unrestrained crying'.

iii) Sounds of coughing

(B) *khaṅgkhaṅg* cf. (O) *khākhā* 'sound of dry coughing'; (B) *khukkhuk* 'mild coughing'; (B) *ghahgghaṅg* 'sound of loud, dry coughing'; (B) *ghaṛghaṛ* cf. (O) *ghaṛghaṛ* expressive of 'purring as well as a rattling sound, especially in the throat'.

iv) Sounds of dancing

(B) *tātā thaithai* 'rhythmic stepping of feet in dance'; (B) *tāthai tāthai* cf. (O) *theithei* 'dance stepping (war dance)'; (B) *tādhin tādhin / dhindhin / dhei dhei* cf. (O) *dhei dhei* 'rhythmic steps while dancing'.

v) Sounds of drinking and eating

(B) cf. (H) *gapgap / gapāgap / gabgab / gabāgab* cf. (O) *gabgab / gabāgab* 'to eat or swallow continuously and quickly'; (B) *ḍhakḍhak* cf. (O) *ḍhakḍhak* 'the sound of gulping any liquid'; (B) *ḍhukḍhuk* 'swallowing or gulping any liquid repeatedly and quickly'; (B) *cukcuk* 'the sound of sipping'; (B) *cōcō* cf. (O) *cācā* 'drinking any liquid in one sip'; (B) *hāpus hupus / hushus* cf. (O) *cākucāku* 'the sound of eating noisily'; *(B) hāmhām* expressive of 'fast eating by a child'.

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vi) Sound of musical instruments

(B) *kringkring* cf. (O) *kringkring* 'sounds of the ringing of a bell' (usually a bicycle); (B) *jhamar jham* 'jingling sound of anklets'; (B) *jhunjhun* cf. (O) *jhunjhun* 'jingling'; cf. (H) *jhanjhan* 'jingling sound'; (B) *ṭinṭin* cf. (O) *ṭiṅgṭiṅg* 'tinkling or jingling'; (H) *ṭanṭan* 'ringing the bell'; (B) *ṭuṅgṭāng / ṭuṅgṭuṅg* cf. (O)*ṭuṅgṭāng* expressive of 'the twanging sound of sitar'; (B) *ṭhanṭhan* cf. (O) and (H) *ṭhanṭhan* expressive of 'a ringing sound'; (B) *ṭhuṅgṭhuṅg* cf. (O) *ṭhuṅgṭhuṅg* expressive of 'a repeated jingling sound'; (B) *ḍhaṅgḍhaṅg* cf. (O) *ḍhaṅgḍhaṅg* 'ding-dong'; (B) *damdam / damādam* 'the sound of repeatedly beating a drum'; (B) *dhā̃i dhapādhap* 'wild beating of drums'; (B) *pōpō* cf. (O) *pẽpẽ* 'continuous low musical sound, such as, of senai and conch-shell'.

vii) Sounds of striking

(B) *dumdām* 'beating or drum-beating'; (B) *dumdum* 'fist blows'; (B) *paṭāpaṭ* cf. (O) *paṭāpaṭ* 'repeated slapping with the hands'; (B) *dhapdhap / dhapādhap* expressive of a 'repeated thumping sound'; cf. (H) *dhamdham* 'a repeated loud sound' (B) *dhā̃idhā̃i* cf. (O) *dumdum* 'the sound produced by giving repeated blows with the hands'.

viii) Sounds of jumping

(B) *taṛāk taṛāk* 'jumping suddenly'; (B) *tiṛing tiṛing / tiṛing biṛing* 'jumping wildly'; (B) *tuṛuk tuṛuk* 'hopping'; (B) *dhapāa dhapās* 'falling of heavy articles or people'; (B) *dhupus* diminutive form of *'dhapās'* cf. (H) *dhap* 'noise, sound, clack (of a shoe)'.

Miscellaneous

(B) *kapkap* 'sound of gulping or swallowing quickly'; (B) *kupkup / kupkāp* diminutive form of *'kapkap'*; (B) *khackhac / khacākhac* 'doing something rapidly (especially writing)' cf. (H) *khacākhac* 'crowded'; (B) *khaṭkhaṭ* / *khaṭākhaṭ* cf. (O), (H) *khaṭ khaṭ* / *khaṭākhaṭ* 'sound of knocking at the door'; (B) *khaṭar khaṭar* cf. (O) *khaṭar khaṭar* 'a rattling sound'; cf. (H) *khaṭarkhaṭar* 'knocking sound when linger'; (B) *khankhan* 'the sound made by striking bell metal'; 'rattling sound'; (B), (H) *kharkhar* / *khaskhas* cf. (O) *khaskhas* 'the sound of snakes moving on dry leaves, or the feeling of being touched by rough skin'; (B) *ghaṛghaṛ* cf. (O) *ghaṛghaṛ* 'a rattling sound in the throat'; (H) *ghaṛghaṛ* 'rumbling thunder'; (B) *caṭcaṭ* cf. (O) *caṭcaṭ* 'feeling sticky'; (B) *caṛcaṛ* cf. (O) *ciṛciṛ* 'feeling dryness in the skin'; (B) *chōkchōk* cf. (O) *chukchuk* 'greedily searching for something'; (B) *ṭalṭal* / *ṭalmal* cf. (O) *ṭalṭal* / *ṭalmal* 'water full to the brim'; (B) *dhapdhap* cf. (B) *dhapdhap* 'the hollow sound beating a set drum'; cf. (H) *dhabdhab* noise thud (B) *ḍhalḍhal* cf. (O) *ḍhalḍhal* expressive of 'looseness of brightness'; (B) *ḍhipḍhip* 'a repeated thumping sound'; (B) *dhaṛ phaṛ* cf. (O) *dhaṛdhaṛ 'sound of palpitation'; (B) dhardhar* 'getting up hurriedly'; cf. (H) *dhardhar 'rattling sound; banging sound'; (B) dhaṛās* 'falling flat suddenly'; (B) *dhapāṅg* 'jumping or falling upon suddenly'; (B) *bijbij* / *bijirbijir* cf. (O) *bibij* / *bijir bijir* 'infested with worms or insects'; (B) *bhasbhas* cf. (O) *bhasbhas* 'a sound caused by something loose or flaccid' (B) *hushus* 'noise of quick movement; (B), (H) *huhu* 'sound of blazing fire' cf. (O) *huhu* 'great speed or force of air'.

2. Onomatopoeic words expressing mental states, emotions, thoughts, ideas and so on. For instance.

i) Feeling of emptiness

(B) *khā̃khā̃* cf. (O) *khākhā* 'an empty house, empty field, or any other place'; (B) *dhudhu* cf. (O) *dhudhu* 'an empty field in the sun', but (H) *dhudhu* means vast expanse, strong heat or flame (B) *bhōbhō* 'an empty room'; (B) *śunśān* cf. (O) *sunsān* 'empty road, place'; (B) *huhu* 'an empty heart, or mind'.

ii) Feeling of fullness

(B) *gamgam* 'sound of reverberation or echo (with reference to people, or instrumental music); cf. (O) *gamgam* 'full of sweat'; cf. (H) *gamgam* good smell, crowded (B) *gijgij* 'full of people'; cf. (H) *gicpic 'crowded'*; (B) *ṭalṭal* cf. (O) *ṭalṭal* 'full with water'; (B) *ṭaiṭai* 'full to the brim'; (B) *thaithai* 'flooded with water (any place)'; (B) *pilpil* 'filled with people or animals in a row'.

iii) Feeling of excessiveness

(B) *kankan* cf. (O) *kankan* (H) also *kankan* 'excessively cold'; (B) *kaskas* 'excessively hot especially liquids'; (B) *gangan* 'excessively hot fire'; cf. (H) *ganganānā* to tremble, to shiver; (B) *dāudāu* cf. (O) *dāudāu* 'a huge fire'; (B) *laklak* cf. (O) *lahalaha* 'excessive flames'; cf. (H) *lahlah* waving, bending.

iv) Expressions of anger and sensitiveness

(B) *kaṭkaṭ / kaṭmaṭ* cf. (O) *kaṭkaṭ / kaṭmaṭ* 'showing anger with big eyes'; (B) *gasgas* cf. (O) *gasgas* 'showing anger'; (B) *gargar* cf. (O) gargar 'shivering with anger'; cf. (H) *garrānā* to howl, to roar (B) *chalchal* cf. (O) *chalchal* 'tearful eyes' cf. (H) *chalchal* 'the sound of splashing, rippling, overflowing of water'; (B) *phōsphōs* cf. (O) *phāphā* 'hissing sound due to sobbing or anger'; (B) *riri* expression of 'a suppressed anger'.

v) Expressions of fear

(B) *chamcham* cf. (O) *chamcham* 'fear, or a tense state of mind expressed in the face'; (B) *thamtham* cf. (O) *thamtham* 'the heavy atmosphere just after a disturbance or disaster'.

vi) Expressions of pain

(B), (H) *kankan* 'aching pain, or the feeling of biting cold'; (B) *kunkun* 'aching pain (slight)'; (B) *ghyānghyān* 'whinning, or monotonous sound of complaining'; (B) *cincin* 'aching pain (slight)'; (B), (O), (H) *jhanjhan* 'jingling or aching pain (head)'; (B) *jhinjhin* 'sensation of pins and needless'; (B) *ṭanṭan* cf. (O) *ṭanṭan* 'a shooting or throbbing pain'; (B) *dhakdhak* cf. (O) and (H) *dhakdhak* 'palpitation'; (B) *pyānpyān* 'whining'; (B) *banban / bōbō* 'dizziness'; (B) *myājmyāj* 'aching (body), feeling feverish'.

vii) Expressions of happiness

(B) *cancan* expressive of 'a smarting sensation'; (B) *canman* expressive of 'vivacity or restlessness'; (B) *cikcik* cf. (O) *cikcik* 'liveliness, or a shining face'. (B) *ḍagmag* 'liveliness, brimming over with' cf. (O) *ḍagmag*.

viii) Expressions referring to varieties of colour

(B) *kiṭkiṭ* cf. (O) *kiṭkiṭ* expressive of 'dirtiness particularly black stains'; (B) *kuckuc* 'expressive of shining black colour'; (B) *kyā̃tkyā̃t* expressive of 'a colour unpleasant to the eyes'; (B) *ghuṭghuṭ* 'pitch darkness'; (B) *ṭakṭak* cf. (O) *ṭakṭak* 'bright colour usually red'; (B) *ṭukṭuk* cf. (O) *ṭukṭuk* 'bright red colour'; (B) *dhabdhab* 'fair complexion'; (B) *miśmiś* expressive of 'deepness, or darkness'.

ix) Expressions of brightness

(B) *cakcak / cakmak* cf. (O) *cakcak* / cf. (H) *cakcakā cakmak* expressive of 'sparkling or shining'; (B) *cikcik / cikmik* cf. (O) *cikcik / cikmik* expressive of 'glistening, glimmering'; (B) *jhakjhak / jhakmak* cf. (O) *jhakjhak / jhakmak* expressive of 'brightness'; cf. (H) *jhakjhak / jhakajhak* 'glittering shining' (B) *jhaljhal / jhalmal* cf. (O) *jhalmal* expressive of 'brightness which glaring or sparkling'; cf. (H) *jhilmil* cf. (O), (H) *jhilmil* 'glittering'.

Miscellaneous

(B) *dyābḍyāb* cf. (O) *ḍabḍab* 'staring with eyes wide open'; (B) *tultul* expressive of 'softness'; (B) *phinphin* expressive of 'fineness (usually clothes)'; (B) *phyālphyāl* 'looking with bewildered eyes'; (B) *byāṛ byāṛ* 'a coarse cloth'; (B) *myāṛmyāṛ* 'unpolished dull colour and, so on.

Conclusion

Symbolic forms or onomatopoeic words are segregated from the ordinary speech-forms because they are imitative of natural sounds or mental feelings. Imitative sounds are produced on the basis of how sounds are perceived by the native speakers. A few onomatopoeic words show a certain amount of variations based upon their socio-cultural contexts. In Bengali, Oriya and Hindi onomatopoeic words sometimes overlap and in other cases differ considerably. The intention of this comparative study on onomatopoeia is to provide a comprehensive source of up-to-date linguistic information in three languages.

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THE MODEL OF AN IDEAL PRODUCTION DICTIONARY

ANTONY MATTHEW

Abstract

There are different types of dictionaries for different purposes. A learner's dictionary (LD), is one that is meant for helping the learners produce language other than their mother tongue. What is argued here is that bilingual dictionaries (BLDs) are better production tools though monolingual dictionaries (MLDs) are generally believed to be so. The production dictionary that is exemplified here is one meant for those whose first language (L1) is Malayalam and who learn English as a second language (L2). What is attempted here is to establish that an L1-L2 dictionary is the best one as a second/foreign language teaching tool.

1.1. The role of dictionaries in English Language Teaching (ELT)

Dictionaries are 'the most widespread single language improvement device ever invented' (Brumfit 1985:v), but not exploited. Quirk (1974) and Béjoint (1981) report their findings on the use of dictionaries by college students at the University College, London, and the students of English at the University of Lyon, France, respectively. Their striking findings are: (1) even the educated among the population do not make regular use of their dictionaries (2) 'for students the dictionary is basically an inventory of words with glosses....mainly used for decoding' (Béjoint 1981:254) (3) 'some of the dictionary features which seem of particular centrality to lexicographers are decidedly peripheral to the ordinary user' (Quirk 1974:154). On the contrary, Tomaszczyk (1979) reports that seventy per cent of his 449 informants, all foreign learners at American colleges and Polish universities and Polish foreign language students, language instructors and translators, stated that they used their dictionaries to solve grammatical problems (p.112). Their statements could have been based on what they thought dictionaries should be used for, not on their actual use of dictionaries.

These statements show the unsatisfactory use of the dictionaries. One could think of a situation as in India where the dictionary is not used at all either for teaching or for learning a foreign language like English in 'difficult circumstances' (West 1960). Though many reasons could be suggested in favour of the use of dictionaries in such circumstances, it would be wise to pause and consider why their potential is not satisfactorily exploited even in situations where foreign languages are taught in favourable circumstances. Do the so-called 'learner's dictionaries' really have qualities in them to serve the purpose of helping the learners in encoding (i.e., the productive use in writing mainly and in speaking) the language as against decoding (i.e., the receptive use in reading mainly and in listening)? What Cowie (1983) says about this is of relevance.

> With regard to EFL (English as a Foreign Language) dictionaries, the range of grammatical information made available in a number of recent works is impressive, drawing as it does in all cases on advances in descriptive linguistics. However, there is considerable evidence that foreign learners use their EFL dictionaries for interpretative rather than productive purposes, and many in addition be disinclined to master the systems used to codify grammatical patterning. Much needs to be done to help foreign students to use such information to fuller advantage (p. 107).

If many are 'disinclined to master the systems used to codify grammatical patterning', it is worth investigating whether the reason for it lies in the grammatical patterning and its coding.

1.2. The Problem with the Available Learner's Dictionaries

Dictionaries can be classified as 'general purpose dictionaries and specialist dictionaries' (Jackson 1988: 159). Our concern is about specialist dictionaries, both monolingual and bilingual, for learners of English.

Owing to the belief that a bilingual dictionary 'ties us down to a perpetual exercise of translation, inhibits us from free creative expression in the foreign language we are mastering' (Quirk 1987: F7), the English dictionaries compiled for foreign learners have generally been monolingual like *Longman Dictionary of Contemporary English* (*LDCE,* Summers, Ed. 2000), *Collins COBUILD English Dictionary* (*CCED,* Sinclair, Ed. 1995), *Oxford Advanced Learner's Dictionary* (*OALD,* Crowther, Ed. 2000), *Cambridge International Dictionary of English* (*CIDE,* Procter, Ed. 2000) and *Macmillan English Dictionary* (*MED,* Rundell, Ed. 2002).

The most serious problem with the monolingual learner's dictionaries are (i) the inadequacy and incomprehensibility of the grammatical system adopted by them and (ii) their disadvantages in being monolingual. Strevens (1987) summarizes his view regarding the unsuitability and incomprehensibility of the grammatical information in learner's dictionaries:

> The sad fact is that this vast treasure of [grammatical] information is accessible only if one has the key, which lies in reading the Introductory essay and appendices. Only the most professional of ELT teachers do this, and not all of them. For very many teachers and almost all learners, the potential help available from LDs remains unknown.

> The fault does not necessarily lie with the teachers. The publishers are themselves caught in a dilemma: the more information they put into the LD, the more complex its codification becomes; but the more complex the codification, the less use an unguided learner can make of it (p. 78-79).

The lexicographer cannot be blamed for 'the temptation to squeeze the last ounce of information in a learner's information into every line' (Atkins 1985: 23), for the grammatical information in a learner's dictionary should be comprehensive enough. In Jackson's (1985) view, if the inclusion of grammatical information in the dictionary is a contribution to making the language learner an independent learner, to enabling the learner to produce for himself correct and appropriate sentences in the language he is learning (p. 59), the grammatical information for productive purposes should be comprehensive. The question is whether all grammatical information in the LDs is helpful for production (for example, the information whether a verb is a linking verb or not, or the information whether the use of a particular word in a particular meaning is rare in Australian or American English). In Carter's (1989) words, 'what may be exciting about a dictionary to an applied linguist is no automatic guarantee of its interest or usefulness to language teachers' (p. 30). A suitable procedure in presenting and coding grammatical information in an LD would be to follow the principle of systematic progression from the core to the peripheral elements of grammar so as to suit both the less advanced and advance learners. Thus 'it is necessary for the editors of learner's dictionaries to distinguish the basic knowledge from the marginal and to show ... whether or not the particular item is worth taking the time to learn' (Nakao 1989: 309 - 310).

Learner's dictionaries are essentially grammatical dictionaries.

> It is hardly possible to construct any non-trivial sentence in a foreign language without knowing the grammatical features of its constituents (Saloni et al. 1990: 3).

This knowledge 'should be found directly in the dictionary, rather than guessed from usually insufficient examples. Perhaps the more number of examples, the greater the chances of the learners unintelligently forming sentences after the examples rather than bothering to understand the grammar and the codes.

Another problem is the arbitrary and conventional dichotomy between grammar and the dictionary. Saloni *et al.* (1990) holds that the dictionary should 'partially eliminate the need for grammars' (p.4) as the required information will be found in the front matter and the actual entries themselves. One practical consequence of the opposition between grammar and the dictionary is that *lexicographers tend to overlook the grammatical features of defined units, while grammarians concentrate on the obviously regular phenomena, unsystematically listing exceptions ... (Saloni et al. 1990: 3-4).*

There is every likelihood of the dictionary and the grammar text using different terminologies for the same grammatical concepts and having even conflicting interpretations of the same facts. There should be conformity between grammar instruction and the grammar used in the dictionary. Which should conform to which might seem to be a problem. The problem is solved if the practice of teaching grammar separately from teaching the use of the dictionary is given up. There seems to be much truth when Lemmens and Wekker (1986) say that *every good learner's dictionary should ... to some extent also be a good pedagogical grammar ... (p. 9).*

The problem of not having a complementary grammar is solved to a certain extent in *NERC Dictionary of English for Speakers of Malayalam* (Karim, Ed. 1998). Matthew (2000) delineates an outline of a model front matter grammar, wherein many of the explanations of the grammatical facts are not only altogether novel but also attempts at an easier and more systematic coding device.

Besides the inadequacy of grammar in MLDs, the second problem mentioned is their disadvantages in being monolingual. Thompson (1987: 283-284) points out three disadvantages of the MLDs:

(1) *The impossibility of getting into an MLD*

An LD which is really meant for productive purposes should ideally produce grammatical and acceptable sentences not only if the words to be used are already known but also when they are not known. If a learner does not know the English equivalent of a word in the mother tongue or a concept he has, an MLD is useless. If he does not know the word at all, the question of finding the required word does not arise except with the help of a thesaurus. Even in a situation of teaching English in favourable circumstances it would be difficult to make the students carry both a dictionary and a thesaurus, both of which are necessarily of huge size. In unfavourable circumstances as we have here in India, where the fact of the existence of dictionaries, not to speak of their uses, is still a matter requiring separate education in itself, making the learners of English carry and use the two 'heavy' books would be quite impracticable and whimsical. Getting into the dictionary is a problem to be occasionally faced by even proficient users of English, and they may get over it with the help of a thesaurus.

> Monological dictionaries are simply not cost-effective for many learners in terms of rewards (correct choice of the word) versus effort (Thompson 1987: 284).

(2) *The Circularity of Definitions*

This could be described, in comparison with (1), as the impossibility of getting out of the dictionary. The learner who consults the dictionary for the meaning of a word is caught in a vicious circle. A learner who looks up

OALD for the meaning of the phrasal verb *put on* finds the following: 'clothe oneself with (a garment)'. Not knowing the meaning of the expression 'clothe oneself', he looks it up and finds its meaning as 'put cloths on oneself'! *LDCE* has one of the meaning of *put on* as 'get dressed in' and the meaning of the verb *dress* is given as 'put clothes on'. *CCED*, using complete sentences to show the user of the dictionary meaning in natural English, does not get out of this problem either. In it the first meaning of *put on* is: 'When you put on something such as a piece of clothing, you place it on or over a part of your body in order to wear it'. The first meaning of *wear* is given as "When you *wear* something such as clothes, shoes or jewellery, you have them on your body or on part of your body'. Some monolingual dictionaries handle this problem by giving only illustrative examples first ad then adding a commentary on the headword. But all this is meaningful only if the word is already known or seen while reading. If the learner does not already know the target language equivalent word or expression of the word in his mother tongue, he cannot consult a monolingual dictionary of the target language.

(3) *Exposure to the ungainly and unnatural language of the definitions*

The lexicographer, often not finding synonyms or equivalent expressions, uses roundabout ways of defining words. This makes the language not only unnatural, but also difficult to comprehend. In case of concrete nouns, MLDs very often give pictures to avoid long-winding definitions. That *CCED* does not do it is one of its glaring defects. A remarkable thing about *LDCE* is that, in addition to definitions, it gives illustrative pictures even for adjectives (e.g. for *continual* and *continuous*) and even abstract nouns (e.g. *evolution*). However, using so many pictures and commentaries to get round the problem of definitions consumes a lot of space.

The disadvantages of using an MLD mentioned by Thompson (1987) can easily be got round by using a BLD. A little introspection might reveal the truth that many users derive more satisfaction from referring to their bilingual dictionaries than to their monolingual dictionaries as the former are much timesaving, if the purpose is only for getting the meaning. Most learners might find using bilingual dictionaries much easier and they pass for learner's dictionaries.

> Indeed, to many people the 'dictionary' means 'a bilingual dictionary' (Tomaszczyk 1983: 45).

It has been recently realized that MLDs are not the best dictionaries for foreign learners of a language. Thompson (1987) holds that bilingual dictionaries are potentially more efficient and more motivating sources of information for language learners (p. 282). This realisation has brought about various bilingual versions of the popular earlier versions of *OALD* or

LDCE for the Chinese and the Italian speakers, *Longman English Dictionary for Portuguese Speakers* (Konder 1983), and English-Japanese learner's dictionaries like *Lighthouse English-Japanese Dictionary* (Takebayashi and Kojima (Eds.) 1984) and *Genius English-Japanese Dictionary* (Konoshi (Ed.) 1988) and so on.

Thompson (1987:282), however, points out six possible drawbacks of the BLDs:

(1) *Reinforcing the tendency of translation*

Instead of trying to think directly in the target language and produce sentences, the learners using BLDs develop the tendency of translating the mother tongue to the target language. However, opinions regarding the effect of the mother tongue on the target language vary. According to Dulay *et al.* (1982),

> Learners' first languages are no longer believed to interfere with their attempts to acquire second language grammar ... (p. 50).

Tomaszczyk's (1983) views on the use of the mother tongue are encouraging:

> ...whether one likes it or not, language learners do rely on their mother tongue to quite a considerable extent. If this cannot be avoided, why not capitalize on it? (p. 44).

It is the only reference aid when culture-bound vocabulary specific to the source language is involved (Tomaszczyk 1983: 47).

(2) *Failing to describe the syntactic behaviour of words*

It is very often thought that knowing the target language equivalents will automatically take care of their use. The failure to describe syntactic behaviour is, to some extent, shared by MLDs too, and it has already been mentioned. The bilingual versions of the MLDs suffer from the same inadequacies of the MLDs on which they are based (e.g. *NERC Dictionary of English for Speakers of Malayalam*, Karim, Ed. 1998). Many bilingual dictionaries are productive only at the level of words. The ignore syntax thoroughly.

(3) *Ordering of meanings not on frequency and range*

This happens when the meanings in the BLDs are, as they very often are, translations of the meanings in the MLDs. A monolingual dictionary which is meant for linguists will naturally have its meanings ordered on the principle of historical development or etymology as in the *Oxford English Dictionary* (2nd Edn. Simpson and Weiner 1989). This would not be of much help in a BLD. The criteria like frequency and range should be applied both for the selection of words and for the ordering of meanings.

(4) *Choosing arbitrarily one of the L2 equivalents*

The learner may choose any one of them quite arbitrarily and use it in his sentence, which may create a quite ridiculous sentence. A Malayalam-English dictionary will give the different meanings like 'sweep', 'beat', 'print' and so on for the word *aṭikkuka*. A learner is likely to produce a sentence like *The father swept his sone* for *The father beat his son*.

(5) *Not being based on needs analysis*

A BLD should not be a general-purpose dictionary. Many are so because they are based on general-purpose monolingual dictionaries. Even the BLDs based on some MLDs are not quite fit for the learners, because these MLDs themselves are meant for all types and levels of learners.

> Generally speaking, the chief reason for their inadequacy is that they try to meet all the needs of all categories of prospective users which are so diverse as to be virtually incompatible (Tomaszczyk 1983: 46-47).

(6) *Being two-directional*

A BLD should not be two-directional in the sense that it should not have two communities learning two different languages as its target. For example, a BLD should not try to teach Tamils English and at the same time try to teach Englishmen Tamil. Otherwise it can cater to the needs of neither. Such dictionaries may be useful to some extent in helping two language communities in the receptive way only.

1.3. The Bilingual Learner's Dictionaries as Solution

The proposed characteristics of a BLD and its advantages in English language teaching will be discussed in the following subsections.

1.3.1. The proposed characteristics of an ideal BLD will be to overcome the drawbacks of the available BLDs. The desired characteristics are enumerated below:

(1) *Need-Based*

Unlike an MLD, which is nonspecific with regard to the learner's linguistic and cultural background, a BLD by definition is specific. A BLD may include more of the words which are specific to the learner's linguistic and cultural background whose L2 equivalents may not find a place in an MLD. For example, a Malayalam-English dictionary can have entries like *puḷśēri* (='a type of curry of Malayalees') and *iṭattaḷam* (='an inner courtyard within the old type of houses of certain castes of Hindus in Kerala'). This specificity will be absent in BLDs which are based on MLDs like *OALD* and *LDCE*.

Even problems with L2 grammar can be specific to certain areas with regard to different L1 communities. For example, the use of articles in English is really a difficult thing for Malayalam-speakers, as there is no exact equivalent of articles in Malayalam. These areas should be specifically treated in a BLD.

(2) *One-Directional*

If the BLD is meant for speakers of Malayalam learning English, it should not seek the expediency of teaching the English community Malayalam at the same time. Otherwise it cannot be fully justified in its purpose of teaching English. Attempting two things at the same time will defeat its purpose. Moreover, how huge and unwieldy a dictionary will be which attempts at teaching two languages at the same time is only imaginable.

(3) *L1-L2 and L2-L1 sections*

The productive purposes of a dictionary should not ignore the receptive purposes. The L1-L2 section is meant to find the equivalents of the L1 words while producing sentences. This section is an index to the L2 section and should act as a very economical substitute for a thesaurus. The L2-L1 section has two purposes: (1) to find meanings of L2 words (receptive purpose) and to know the syntactic behaviour of the L2 words (productive purpose). This section may be thought of as the real dictionary.

(4) *Copious use of examples and explanations*

This is to reinforce the awareness of the difference between the mother tongue and the target language. The learner should be aware that in many cases a literal L1-L2 translation is not possible. For example, the interrogative word *etrāmatte* in Malayalam has no one-word equivalent, and periphrastic expressions like ‘which in the series of’, ‘which in the list of’, ‘which in the row of’ and ‘which in the order of’ need to be used. Copious use of example sentences in L2, along with L1 equivalents, will show the differences. This should go along with ample explanations too.

(5) *Productivity*

It was noted in (2) above that the L1-L2 section is one step towards productivity, to find the equivalents of L1 words. Along with the equivalent it should be clearly mentioned in what sense each equivalent is used. This helps the learner go to the specified equivalent in the L2-L1 section to find out its grammatical or syntactical behaviour. In the relevant entry there will be information enough either in the form of codes or otherwise to use the word correctly in a sentence, provided the learner knows the grammar presented in the front matter of the dictionary.

> The [bilingual] dictionary should indeed index the grammatical statement (Gleason 1967: 102).

(6) *A Front-Matter on Grammar*

A BLD should be a good pedagogic grammar too. It should be so self-sufficient as to avoid the need of a supplementary grammar text. Householder's (1962) opinion that the lexicographers should 'prepare a complete syntactic grammar of their language as a necessary preliminary to writing their dictionary' (p. 576) is quite reasonable.

(7) *Definitions/Commentaries and Grammatical Explanations in L1*

Very often it would be difficult to find L2 equivalents for L1 words and expressions, in which case commentaries and explanations should be used. If these commentaries and explanations are to be comprehensible to the learners, they are to be in L1. The front matter grammar also should be explained in L1.

(8) *Ordering of meanings on the bases of frequency and range*

The basis on which the word meanings are ordered should not be the principle of historical development as in some MLDs, which are meant for linguists and those who are already proficient in L2. The criteria of frequency and range should be used not only in the selection of words but also in the ordering of their meanings. The meaning of *humour* as 'one of the four liquids in the body' should be given only as the last meaning.

(9) *Practice exercises on the use of the dictionary*

The fact that there is a good dictionary does not guarantee that the learners will understand or try to understand its use. The exercises in the front matter of the dictionary will be helpful for the teachers in teaching dictionary use.

1.3.2. The Advantages of BLDs in ELT could be better appreciated in the background of teaching English in 'difficult circumstances' (West 1960) as in India.

(1) *Feeling of Confidence*

Even learners with the lowest capabilities will have a feeling of confidence with their BLDs unlike when they have an MLD or other teaching materials in English. At least finding an equivalent of an L1 word should be possible for anyone and it gives a sense of satisfaction and achievement.

(2) *Active Use*

An ideal BLD is no more a tool for the passive use of looking up meanings and pronunciation. The learners, with proper guidance, can generate language.

(3) *Development of the Writing Skill*

The writing skill of English, which is more important than the speaking skill in the Indian context, can be developed through the use of a BLD of English. The teachers need not resort to contrived methods and techniques. Even the least competent teaches can monitor the learners' writing through the use of the BLD. The BLD is a self-sufficient tool in teaching both vocabulary and grammar.

(4) *Learner-Autonomy*

This much-heard-of expression has gained currency on the basis of recent researches in second language acquisition, and is much favoured by the advocates of communicative language teaching. The principle of learner autonomy is that when the learner is engaged in learning in his own way and at his own pace, he is more motivated. There is no guarantee that the learner learns something by the fact that he is taught. In the use of the dictionary the learner is left to himself to use it in his own way without unnecessary interference of the teacher. Another great advantage of a good BLD is that the learner can find out his mistakes on his own and correct them without the help of the teachers.

(5) *Task-Orientedness*

Learners lose interest in learning when they have to do mechanical exercises. Writing something on their own using their BLDs is felt as a powerful activity, which is stressed very much in the communicative teaching of languages.

(6) *Management of Large Classes*

Activities meant for large classes are difficult to think of. Facilities for group work and preparation for specially planned materials are difficult in the Indian situation. It is difficult for the teacher to pay individual attention to the learners. In all these situations a BLD is very helpful. The BLD takes the role of the teaching material and of monitoring the learners' performance.

A striking advantage of an ideal BLD is that it takes away the burden of correction of composition from the teachers. The learners can correct the mistakes on their own with the help of the dictionary, and perhaps with a little assistance from the teacher.

(7) *Communicative Language Testing*

The use of an ideal BLD is very helpful for what Swain (1985) calls the 'bias for best' principle, which means 'do everything possible to elicit the learner's best performance' (p. 42) in large-scale communicative language testing. In the case of written work in testing, the 'bias for the best' principle requires 'to have access to dictionaries or other reference material as well as to have the opportunity to review and revise their work' (Swain 1985: 43). If the BLD is made use of by the learners in language testing, it has the effect of washback.

> Washback refers to the effect a test has on teaching practices ....[I]f they [the teachers] know the content of a test and/or the format of a test, they will teach their students accordingly (Swain 1985:43).

Thus, a BLD can be advantageously used both in testing and in teaching.

1.5. A Sample Entry in the L1-L2 Section of a BLD

As the BLD envisaged here is exemplified as one for speakers of Malayalam learning English, the headwords in the entries in the L1-L2 section in the dictionary will be Malayalam words. A sample entry could be illustrated here. The entry that is illustrated below will be the Malayalam verb *kāṇuka* = 'see', whose constituents are given after the manner in *NBS Malayalam-English Dictionary* (Pillai 1976).

kāṇuka vi. see. *and́harallāttavaṟ kāṇunnu.* vt. **a.** see, find sb/sth. *ñānoru pāmpine kaṇḍu.* **b.** see, realize, understand sth (*bōdhyamāvuka, manssilāvuka*). *pariśōdhanayil ayāḷ kuṟṟakkāranennu kaṇḍu.* **c.** observe sth (*nirīkṣikukka*). *avaṟ sinima kāṇukayāyrunnu.* **d.** consider sth (*parigaṇikkuka*). *entu ceyyān kaḻiyumennu pinnāle kāṇām.* **e.** find out sth (*kaṇḍupidikkuka*). *ṭṟein puṟappeḍunna samayam eppoḷ ennu kāṇuka.* **f.** presume sth (*karutuka*). *ñān niṇṇaḷe oru mānyanāyi kāṇunnu.* **g.** estimate sth (*kaṇakku kūṭṭuka*). *samkhyakaḷuḍe āke tuka kāṇuka.* **h.** see sth beforehand (*munkūṭṭi aṟiyuka*). *avaṟ varānirikkunna āpattu kaṇḍu.*

The learner can choose the suitable English word given as sense among the ones given above and look up the latter in the L2-L1 section of the BLD for its correct use in a sentence.

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Notes & Discussions

SYNTACTIC DEFICITS IN KANNADA SPEAKING APHASICS

SHYAMALA K.C. & SAPNA BHAT
AIISH, Mysore

Introduction

Aphasia is an impairment of language functioning of persons who have incurred localized cerebral damage that results in a reduced likelihood that an individual involved in a communicative situation will understand or produce appropriate verbal formulations (Eisenson, 1973).

The above description of aphasia states that there may be impairment in comprehension as well as expression. This impairment may be at phonological, semantic, syntactic or pragmatic level. Impairment at syntactic level leads to a major deficit in the smooth process of communication. Individuals with aphasia, regardless of type, frequently display difficulty in processing syntax. There are a host of findings regarding the syntactic deficits in aphasics and these are ultimately tied to linguistic theories.

Majority of investigations have been done in Broca's aphasics. They produce speech characterized by lack of function words, telegraphic style, lack of inflectional morphemes etc., which is know as agrammatic speech. Apart from production, they show particular difficulties comprehending syntactically complex structures (Blumstein et al 1998). Theoretical accounts suggest problems in processing or representing thematic relationships of moved noun phrase (NP) arguments to their predicates through abstract markers called traces (Grodzinsky, 1989).

Studies concerning other aphasic syndromes and their performance on syntactic tests have been limited. Blumstein et al (1998) showed trace deletion phenomenon in Wernicke's aphasics as well. Stark and Wytek (1980) reported similar kind of errors in syntactic comprehension and expression in subjects with transcortical motor aphasics. The sentence comprehension in anomics, Broca's, Wernicke's, mixed and global aphasics, was compared in a study done by Penser and Schieffers in 1990. Results revealed decrease in comprehension in the order of anomics, Broca's, Wernicke's, mixed and global. Results revealed good correspondence between reception and expression skills in all other subjects.

Explanations for above results have been suggested in terms of reduced resources, access limitations and deficits in representation of the linguistic information regarding sentence structure (Meyerson and Goodglass 1972, Saffran et al 1989).

Most of the studies have concentrated on one aphasic syndrome and deal either with expression or comprehension of syntax. Due to this limitation a comparison becomes difficult between different types of aphasias. So present study was carried out with objectives of comparing the performance of different aphasic syndromes on tests of syntactic production as well as comprehension. This would give information regarding relation between syntactic comprehension and expression in aphasics.

Method

Seven subjects (five males and two females) were selected for the present study. Five subjects had Broca's aphasia, one anomia and one transcortical aphasia. This was decided on the basis of clinical observation and western aphasia test battery findings (Kertesz and Poole, 1974). Subjects were efficient users of Kannada, pre-morbidly.

Subjects syntactic abilities were evaluated in following way:

a. Syntactic Production

i. Conversation and Spontaneous Speech

The desired responses were elicited by using questions like "How are you today?" Apart from that open-ended questions were asked using format from Boston Diagnostic Aphasia battery (Kaplan and Goodglass, 1972, Appendix-A)

ii. Picture Description

The coloured version of the picture in western aphasia battery (Kertesz and Poole, 1974) was used to elicit speech. Subjects were asked to describe whatever was happening in the picture (Appendix - B).

iii. Sentence Repetition

The subjects were presented with twenty sentences taken from Chengappa (1991), Gayathri and Thirumalai (1988) (Appendix - C). The investigator read these out clearly and subjects were expected to repeat these sentences.

b. Syntactic Comprehension

This was done by administrating syntax section of linguistic profile test (Karanth, 1980) to the subjects (Appendix - D). This section contains 130 test items sampling a wide range of basic syntactic forms of the language, tested in 11 sub sections. Out of these 130 items, 65 are incorrect and 65 syntactically correct and are randomly arranged. These items were presented auditorily and subjects were required to judge utterance for grammatical acceptability.

c. Analysis

The utterances of subjects were broadly transcribed using IPA for the syntactical productions. The qualitative analysis was done in following ways:

i. The length, type of production, word order, correct usage and complexity were evaluated.

ii. The mean length of utterance (MLU) was assessed using Brown's rules (Brown, 1970) which were modified for Kannada (Appendix - E).

iii. The repetitions were scored using a checklist of Li and Williams (1990) (Appendix - F).

iv. Spontaneous speech and picture description utterances were analyzed using qualitative description of Aphasic production by Saffran, et al (1989).

v. The response of the subjects to the items in syntax section of LPT was recorded and judged for correctness or incorrectness.

Aphasic productions were qualitatively described using Schiffman's grammar of spoken Kannada (1979). The relation between syntactic comprehension and production was also sought.

Results and discussion

The demographic details of the subjects are given in table 1.

Sl. No.	Name	Age/Sex	Type of aphasia	Educational qualification
01	B	56 years / Male	Broca's	SSLC
02	N	56 years / Male	Broca's	B.Sc
03	R	38 years / Male	Broca's	SSLC
04	S	30 years / Male	Broca's	SSLC
05	V	27 years / Female	Broca's	SSLC
06	T	35 years / Male	Anomia	BA, L.L.B
07	S	38 years / Female	Transcortical sensory	SSLC

The results are discussed under following headings:

Syntactic expression

Broca's Aphasics

Table 2: Details regarding MLU and sentence types for each subject.

Sl. No.	Name	Type of aphasia	MLU	Sentence type
01	B	Broca's	2	Noun + main verb
02	N	Broca's	3	Noun + Adjective + main verb
03	R	Broca's	2	Noun + main verb
04	S	Broca's	2	Noun + main verb
05	V	Broca's	2	Noun + main verb
06	T	Anomia	3.5 - 4	Noun / pronoun and adjective and main verb
07	S	Transcortical sensory	3	Noun + adjective + verb

When considering Broca's aphasics as a group, their MLU ranged from 2-3. In repetitions phonemic errors, omission, interjections were observed. All of the subjects showed the grammatical error of changing past tense marker to present tense marker, while repeating.

The basic sentence structure seen was that of noun + main verb. When the MLU was more as in case of Mr. N, the structure was Noun + Adjective + main verb. When MLU was less as in other Broca's aphasics, the main grammatical structure was noun with very few verbs. There was dearth of other structures like inflected verbs, prepositions, auxiliaries. But in case of Mr. N, as the MLU was more, variety of grammatical structures was also more. Mr. N used inflected verbs and adjectives as well.

This leads to the conclusion that there is correlation between MLU and the complexity of sentence structure an aphasic produces i.e., more the MLU more complex sentences an aphasic would produce. But as a group, Broca's aphasics showed abundance of nouns in their utterances with reduction of other syntactic structures. In spite of reduced complexity, use of intonation to express emotion was preserved.

Similar findings have been reported by investigators like Meyerson and Goodglass (1972), Tesak (1994) etc. They report of nouns being abundant in Broca's aphasics' speech while as there is a dearth of other structures like verbs, prepositions, auxiliaries etc. This may be attributed to Broca's aphasics lack of access to such syntactic structures. Another reason for less complex utterances could be compensation for the motoric disability. It would be easier to use only content words to convey the message rather than have even function words in the sentence. This has been earlier referred to as "law of economy" (Meyerson and Goodglass, 1972).

Anomic Aphasia

In anomic aphasic subject, Mr. T, the MLU ranged from 3.5 - 4. He did not make any errors while repeating except in one instance where he changed the past tense marker to present tense marker.

E.g.: He said "ivattu" (Today) for "nine" (yesterday). His basic sentence structure was noun/pronoun + adjective + verb.

His sentence also contained abundance of nouns but sentence structure was comparatively well formed than those seen in Broca's aphasics. His productions contained more open class words with inflected verbs and some auxiliaries also being present. Adjectives were more abundant than prepositions. His utterances rarely contained first person pronouns, adverbs and embedded structures.

Thus on comparing his productions with those of Broca's aphasic, he used more variety of structures. As his MLU was more, he showed increased complexity of syntactic structures. But his sentences showed presence of semantic paraphasia like for "kurchi" (Chair), he said "adu kulitukollalike" (it is for sitting). This could be attributed to word finding problem in this anomic subject. Similar results have been shown by Saffran et al (1989) and Berndt et al (1987). As a word class, adjectives are reported to be more preserved in anomic aphasics than prepositions, which is similar to what was seen in above aphasic.

e. Transcortical sensory Aphasia

Transcortical sensory aphasic (Mrs. S) had an MLU of 3. Her repetitions did not show any errors. Her sentence structure was that of Noun + adjective + verb. Again open class words like nouns were abundant in her productions. MLU also correlated well with the variety and complexity of structures present. These findings support the results of earlier studies by Carter (1968) and Saffran et al (1989). But compared to anomics the variety of syntactic structures was reduced. Anomics showed presence of pronouns and adverbs but these structures were absent in Transcortical sensory subject.

According to the above results, if the aphasics have to be put in a hierarchy of complexity of syntactic productions, it would be Broca's, Transcortical sensory and Anomic aphasic. Broca's aphasics produced least complex structures followed by Transcortical sensory, which was followed by Anomic. Picture description and spontaneous speech samples proved to be more useful tools than repetition. MLU was the measure which correlated significantly with the syntactic complexity of utterances. More the MLU, more was the variety and complexity of syntactic structures produced by the subjects.

II. Syntactic Comprehension

Table 3: Scores of each subject in different subsets of LPT

Sl. No.	Name	Scores on LPT subsets (wrong responses)										
		MP	PL	T	PNG	CM	TIC	ST	P	CCQ	CC	PC
1	B	6	3	4	4	3	3	4	4	3	3	4
2	N	2	2	2	4	3	2	1	1	4	2	2
3	R	2	2	5	4	3	3	5	2	1	5	4
4	S	2	2	2	6	4	3	2	1	4	3	3
5	V	7	1	2	4	3	4	5	4	3	3	6
6	T	2	1	1	4	2	0	0	0	0	0	0
7	S	0	1	3	2	3	1	1	0	3	3	3

Mp - Morphophonemic structures, Pl - Plural Markers, T - Tense markers, PNG - PNG Markers, CM - Case Markers, TIC - Transitive, Intransitive, Causative, ST - Sentence Types, P - Predicate, CCQ - Conjunctions, Comparatives, quotatives, CC - Conditional Clause, PC - Participal Clause.

Broca's Aphasia

As is evident from the table 3, most of Broca's aphasics show more errors in comprehension of syntactic structures. Errors were seen on morphophonemic structures, tenses, PNG markers, sentence types, case markers, conjunction, comparatives and quotatives, conditional clause and Participal clauses. Among the plural forms, usual plural form "galu" is correctly identified. But they were not able to comprehend the mass nouns and accepted the forms like "nirugalu" (waters) as correct. In tenses, future and past tenses were difficult to recognize. This is because generally irregular future tense markers are seen in Kannada, which are more difficult to access.

In PNG markers, Broca's aphasics had difficulty to judge the agreement between person, number and gender. They showed more problems in comprehending singular masculine markers. Causatives were seen to be more difficult to comprehend. E.g. Maguvannu malagisu (put the child to sleep). In sentence types "yes - no question" were comparatively more easy to comprehend than affirmative and negative sentence types.

In predicates, pronominal constructions like "pustaka nannadu" (this book is mine), were difficult to comprehend than adjectival constructions like "avara nayi doddadu:" (their dog is bigger). Quotatives and comparatives were more difficult than conjunctions. In conditional clauses, complex conditional clause and modals were difficult for them to comprehend. In participial clause, negative relative and relative participles were seen to be difficult to comprehend.

These findings support the previous results that agrammatic have comprehension deficits as well as expression deficits as reported by Goodenough et al (1967), Pierce et al (1990). From the present study, it can be concluded that agrammatic listeners are unable to make full use of the function words present in sentence, to comprehend the sentences. It can be seen that Broca's aphasics violate the unity between noun and verb phrases. They are not able to utilize information provided by different grammatical markers and just use key words in a sentence to understand it, which at times leads to wrong interpretation.

Anomic Aphasics

In anomic aphasic (Mr. T), it was seen that the number of errors were lesser compared to Broca's aphasic group. The more number of errors were seen in PNG markers, morphophonemic markers, case markers, plural and tense markers. These again are categories, which contribute to the meaning of the sentence. They could not appreciate the relation between these and content words in the sentence, which leads to an incorrect interpretation. Above findings are in accordance with those of Goodglass et al (1970). They found that anomics were severely impaired on the task of word comprehension. This may be attributed to phonological lexical impairment in anomics that affected word comprehension. On the whole Anomics did better than Broca's aphasics.

f. Transcortical Sensory Aphasic

Transcortical sensory aphasic (Mrs. S) showed fewer errors when compared to Broca's subject but more errors as compared to anomic subject. She showed more errors in tenses, case markers, conditional and participal clauses. Similar results were shown by Goodenough et al (1967) and Goswami (1996). They also found that the comprehension of Transcortical sensory aphasics is not as good as that of anomics. This could be attributed to more generalized damage in such subjects compared to anomics in terms of major language areas.

This suggests a trend in comprehension from poorest to best in the aphasic group i.e., Broca's, Transcortical, sensory, anomic. There was no specific patterns of errors in comprehension as shown by different aphasics. All aphasics just differed in the number of errors (i.e., quantitatively) but not in type of errors i.e., (qualitatively).

III. Correlation between syntactic comprehension and production

Results reveal that a correlation is seen between comprehension and expression. The subjects who produced syntactically complex utterances could even comprehend complex structures better. And the trend in comprehension and expression is same i.e., Broca's followed by Transcortical sensory followed by Anomics in the hierarchy of performance. Even within Broca's aphasic group the subject who had increased MLU i.e., Mr. N, had better syntactic comprehension when compared to other Broca's aphasic subjects. This suggests that MLU is a valid tool and can predict the ability of syntactic comprehension of an aphasic apart from providing information on expression.

Present study reveals syntactic production and comprehension deficits in all aphasic subjects; hence these have to be taken up in therapy. Specific therapy programs like mapping therapy (Schwartz et al 1994) and Helms elicited linguistic program for syntax stimulation (HelmsEstrabrooks and Ramberger, 1986), which concentrate on improving syntactic skills in aphasics should be undertaken. Earlier classical approaches to treatment aimed at production of single words followed by inclusion of these words in phrases and sentences. They may not help in remediating specific syntactic deficits whereas specific approaches would.

Conclusion

Thus above study revealed deficits in syntactic comprehension and expression in all aphasic varieties. This study throws a light on patterns of syntactic deficits in the Kannada speaking aphasics. To conclude, in comprehension as well as expression a trend of increasing efficiency was seen (Broca's, transcortical sensory, anomics; Broca's being the least efficient). MLU proved to be a very useful tool as it predicted the comprehension abilities as well. A definite relation was seen between comprehension as well as expression in all the aphasic syndromes.

This study provides implications in terms of therapeutic processes as well. The results indicate the need for implementing of specific therapy programs like HELPSS (Helms-Estrabooks and Ramberger 1986) and Mapping therapy (Schwartz et al 1980), for improving syntactic skills in aphasics. Earlier classical approaches which stress on single word production may increase the syntactic deficits. Thus syntactically oriented approaches should be started at the early stages of language intervention.

This study takes a step towards highlighting syntactic deficits in Indian languages. This kind of study needs to be replicated in other Indian languages and on more subjects in order to provide more conclusive information on cross-linguistic syntactic deficits in aphasic population.

APPENDIX - A

1. Conversational and Expository Speech

Conduct informal exchange, incorporating suggested questions, to elicit as many of the desired responses as possible. Record verbatim. Tape record, if possible.

a. Response to greeting. (Q. "How are you today?" or equivalent):

b. Response with "yes" or "no". (Q. "Have you ever been in this hospital before?" or "Have I tested you before?"):

c. Response with "I think so", or equivalent. (Q. Do you think we can help you?" or "... Have I helped you?"):

d. Response with "I don't know" or equivalent. (Q. "When are your treatments going to be finished?"):

e. Response with "I hope so" or equivalent. (Q. "Before too long let's hope. What do you say?"):

f. "What is your full name?":

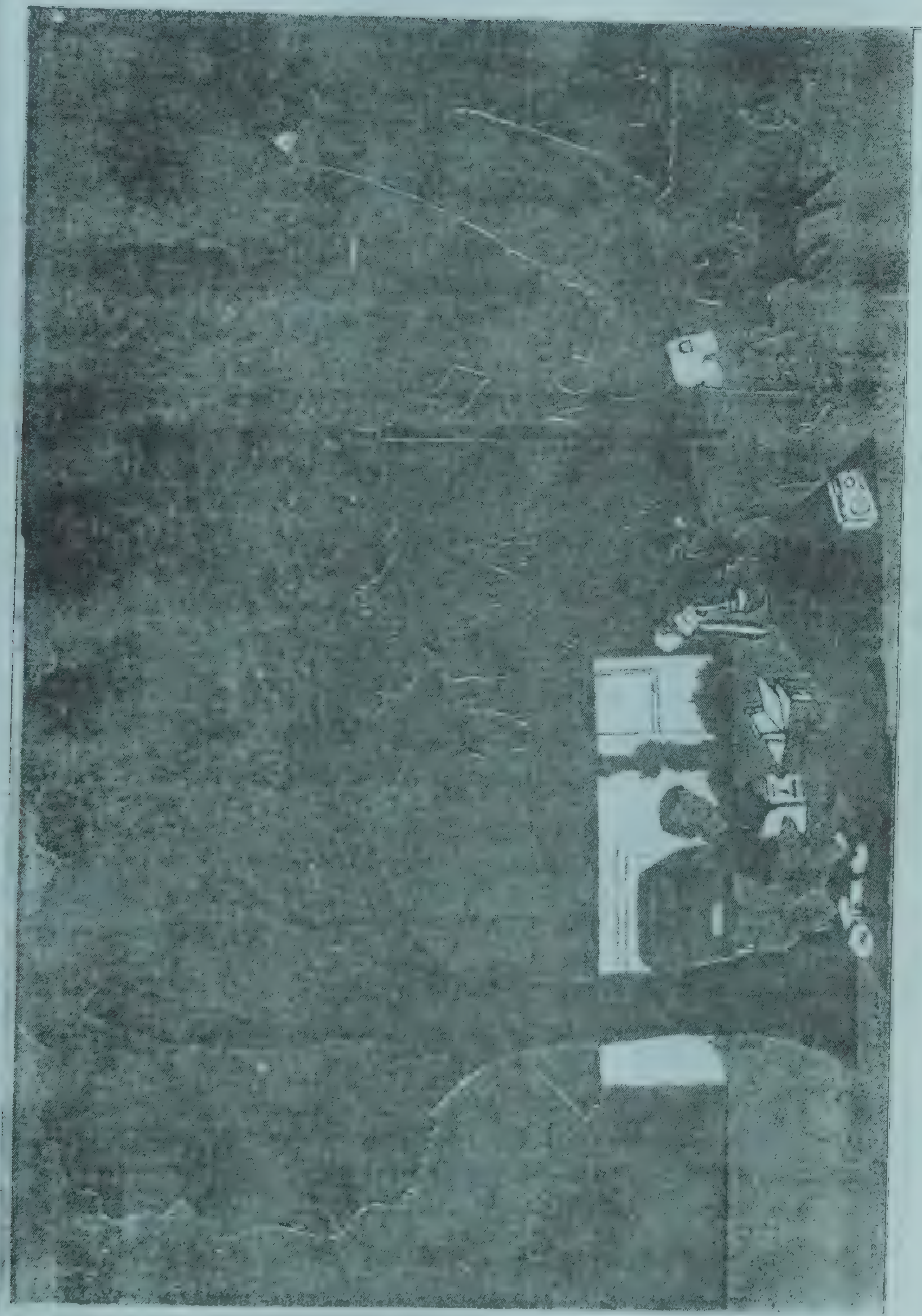
g. "What is your full address?" (Accept as correct any response that includes street and number or street and city.):

h. Open-ended conversation: In order to elicit as much free conversation as possible, it is suggested that examiner start with familiar topics such as, "What kind of work were you doing before you became ill?" and "Tell me what happened to bring you to the hospital." Encourage patient to speak for at least *10 minutes*, if possible. (Minimize use of "yes"-"no" questions and probing for specific facts.) If tape recording is not used, record as much as possible verbatim.

i. Presentation of picture. Show the test picture and tell patient: "Tell everything you see going on in this picture." Point to neglected features of the picture and ask for elaboration if patient's response is skimpier than his apparent potential. A minute is usually enough time.

Cookie Theft (Card 1)

APPENDIX - B



APPENDIX - C
Sentence Repetition

1. *Kamala barutta:ḷe*, 2. *Avaru o:didaru*, 3. *Rama ho:gutta:ne*, 4. *Hasugaḷu malagidave*, 5. *Ninu barutti:ya?*, 6. *Bekku no:ḍuttade*, 7. *Na:nu barutte:ne*, 8. *Avaru na:ḷe barutta:re*, 9. *Sankara ninne banda*, 10. *Si:la monne bandaḷu*, 11. *Maguvannu malagisu*, 12. *Pensil mattu ha:le koḍu*, 13. *Ra:dha o:dilla*, 14. *Ivanu doḍḍa huduga*, 15. *Lataḷ tirugi u:ṭa ma:ḍta:ḷe*, 16. *Pa:pa a:ṭa adbahudu*, 17. *Nanage hoṭṭe hasiva:gtade*, 18. *Gouri o:didre pa:sa:gta:ḷe*, 19. *Idakkinta a: mara doḍḍadu*, 20. *Na:vibbaru ho:gi avaḷannu no:ḍo:na*.

APPENDIX - D
SECTION II : Syntax

Instructions: Instruct the subject that the following list of words and sentences contains both correct and incorrect forms. Ask the subject to listen carefully and indicate whether each item is correct or not. Illustrate with one or two examples if need be. Read the items in the list one by one. Repeat once if necessary. If the subject fails to respond; give him the test items in the written form. Accept correction once. Score for each accurate response in subsections A, B, C and D and 1 for each accurate response in subsections E, F, G, H, I, J and K. Make a note of the stimulus modality used, and also the modality in which the subject responds.

A. Morphophonemic Structures

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *eḍagai,* 2. *paisenalli,* 3. *huḍuganalli,* 4. *dārīlī,* 5. *nijaya,* 6. *kalluvannu* 7. *maneyalli,* 8. *kāḍuge,* 9. *bīdalli,* 10. *nīraḷli,* 11. *maguvannu,* 12. *ūrualli,* 13. *keḷaguṭe,*14. *baladivi,* 15. *maralli,* 16. *nijava,* 17. *ajjalli,* 18. *ūralli,* 19. *keḷadutti,* 20. *pustakadalli.*

Maximum Score 10

Patient's Score ___

B. Plural Forms

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *huḍugiyaru,* 2. *ajagaḷu,* 3. *anna,* 4. *danaru,* 5. *maragaḷu*, 6. *nīrugaḷu,* 7. *ganḍasaru*, 8. *pustakaru,* 9. *hengasandiru,* 10. *akkandiru*.

Maximum Score 5

Patient's Score ___

C. Tenses

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *nīvu barutta iri,* 2. *avaru naḷe bandaru,* 3. *ṣankara nine hōda,* 4. *nīnu īga tānē baruve,* 5. *amma nāḷe iṣṭu hottige bandiddaru,* 6. *nānu skūlalli iddene*, 7. *avanu kaḷeda vāra bandidda,* 8. *sīte monne baruttāle*, 9. *nānu skūlalli iruttā iruttēne,* 10. *nānu naḷe maneyali iruttene*.

Maximum score 5

Patient's Score ___

D. PNG Markers

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *nīnu malaguve,* 2. *kamala barutāle,* 3. *avaru ōḍida,* 4. *hasu baruttāne,* 5. *avu malagidavu,* 6. *nāvu nōḍuvaḷu,* 7. *avaru hōgattāre*, 8. *nīnu baruttane,* 9. *adu malagitu,* 10. *gaṇēṣa ōḍidaḷu,* 11. *avu hōguttīri,* 12. *nīvu nōḍuvaru,* 13. *nīnu ōḍide,* 14. *nāvu malagidiri,* 15. *nīvu hōguttīya?,* 16. *sīte ōḍidaḷu,* 17. *adu nōdavudu*, 18. *nānu baruttēne,* 19. *nāvu hōguttēve,* 20. *sīte nōḍuvanu.*

Maximum Score 10

Patient's Score ___

E. Case Markers

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *huḍuganige hēḷide,* 2. *mēḷakke gombe*, 3. *pennida kāgada bari,* 4. *angaḍiyinda tandaddu,* 5. *kelsada huḍuga,* 6. *iṭṭigeyinda maneyalli kaṭṭisidaru,* 7. *pustaka aṇṇanannu koṭṭe,* 8. *maravannu uruḷisu,* 9. *ūrinalli idde,* 10. *bassininda hōde*.

Maximum Score 10

Patient's Score ___

F. Transitives, Intransitives and Causatives

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *hālige nīru berssabēda*, 2. *akkasāli māḍuttāne*, 3. *huḍugi ōduttaḷe*, 4. *nānu haṇṇanu tinnuttē*, 5. *ajji kaḍeyuttāḷe*, 6. *magu nidde malaguttade*, 7. *avaru namminda kelasa māḍuttare*, 8. *maguvanu malagisu*, 9. *nāvu nimminanda pāṭa ōdisuttēve*, 10. *avanu maguvige tinnuttāne*.

Maximum Score 10

Patient's Score ___

G. Sentence Types

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *idu bengaḷūru alla*, 2. *avaru javābdari nāve nōdikoḷḷutāre*, 3. *avanu sinimāge hōgōṇa*, 4. *idu nanna ṣāle*, 5. *nīnu ā kelasa māḍabāradu*, 6. *nāvu hāḍu hēḷali*, 7. *avalu kōtiyannu nōḍi nakkaḷu*, 8. *bāviyalli nīru allavā*, 9. *nimage nīru allavā*, 10. *avanu kaphi kudi*.

Maximum Score 10

Patient's Score ___

H. Predicates

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *ī pustaka nannadu*, 2. *īlaṇga kamala*, 3. *ninna kōne yāva?*, 4. *avara nāyi doḍḍadu*, 5. *ā pennu avana*, 6. *jorāgi ōḍu avara kudure*, 7. *ninne hāḍiddu nanna tangi*, 8. *avaru mane yavadu?*, 9. *ā bekku chikka*, 10. *ā sīre ammanadu*.

Maximum Score 10

Patient's Score ___

I. Conjunctions, Comparatives and Quotatives

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *rāmanū ṣankara skūlige hōdaru*, 2. *nanna aṇṇa makkaḷu bandaru*, 3. *gaṇeṣa mattu rameṣa hōdāga sīteye karakonḍu hōdaru*, 4. *pensil athva pennu koḍu*, 5. *girīsa surēṣanaginta chikkavanu*, 6. *sudhage lalita uddavāgiddāle*, 7. *mēṣtru pāṭa māḍuttene anta hēḷidaru*, 8. *ī rājakke maisūru hesarittu*, 9. *bhārati sanje maḷe baruttade hēḷidalu*, 10. *lakṣmi embavaḷu bandiddalu*.

Maximum Score 10

Patient's Score ___

J. Conditional Clauses

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *nīnu bēga hōdarū bassu siguttiralilla*, 2. *nīnu tinnu iddare doḍḍavanāguvudilla*, 3. *avanu manege bandare duḍḍu koḍuttene*, 4. *angaḍiyavanige haṇa koṭṭu avanu pustaka koḍuttane*, 5. *nīvu hēlidare avaru māḍidaru*, 6. *ivattu duḍḍu sikkidare nāvu mārkaṭṭige hōguttēve*, 7. *avaru modalē hēḷddare mādabahudittu*, 8. *nīnu manege banda haṇṇu koḍuttide*, 9. *nānu bēlūrige hōda sitābalikeyahhu nōḍalilla*, 10. *bharati barade iddare nānu benraḷūrige hōguvudilla*.

Maximum Score 10

Patient's Score ___

K. Participial Constructions

Sl. No., Test Item, Stimulus Modality (Verbal, Graphic), Subject's Response (Verbal, Graphic, Gestural), Accuracy of Response

1. *ninnanu nōdade bahala dinavāyitu*, 2. *nīnu phēlāgada huḍugana?*, 3. *baṭṭe ogeya agasa*, 4. *nānu ivattu kāphi kudi tiṇditinde*, 5. *idu nānu ōdū skūlu*, 6. *bēsāya māduvavaru raitaru*, 7. *avaḷu maisurige bandu kannada kaliyuttāḷe*, 8. *auṣadhi kuḍide jvara hōguvudilla*, 9. *nānu īṣṭapaṭṭa sinema ṣankarābharaṇa*, 10. *rāmaṇṇa yavattā bandavanu ivattu yāke banda?*

Maximum Score 10

Patient's Score ___

APPENDIX - E

Rules for Computation of Mean Length of Utterance [MLU]

(1) The first 100 utterances were transcribed - Utterance during story narration was mandatorily included in the count.

(2) Unintelligible or partially intelligible utterances were omitted from the count.

(3) Stutterings (Mark by repeated effort at a single word) and all repetitions were counted as one word. Repetition for emphasis should be counted as two words.

(4) Fillers such as 'mm' or 'oh' are not counted, but 'no, yes' etc., were counted as words.

(5) All compound words were counted as two words if the child used the constituent morphemes separately in two different linguistic context - e.g. birthday.

(6) All inflections (possession, plural, tenses) were counted as separate morphemes.

(7) Imitations and elliptical answers to questions which gave the impression that the utterance would have been more complete if there had been no eliciting questions (e.g. What is that? 'My box') were counted.

(8) Rote passages such as nursery rhymes, songs or prose passages which have been memorized and which may not be fully processed linguistically by the child were omitted.

9) All partial utterances which are interrupted by outside events or shift in child's focus were excluded.

10) MLU was calculated using the following formula:

$$\text{MLU (W/M)} = \frac{\text{Number of words/morphemes}}{100}$$

APPENDIX - F
Description of Repetition Error Categories

Word substitution errors

1. Phonemic error-approximations to the target words with one or more phonemes in error (smail/*snail*).
2. Related words- word is semantically related to the target word (chair/*stool*).
3. Unrelated word- word bears no obvious phonological or semantic resemblance in the target word (clothes/*hands*).
4. Neologism- utterances are neither real words nor phonemic approximations of the target words (stoploggit/*bicycle*).
5. Phonemic attempt- phonemic or syllabic attempt at the target word (bi.../*bicycle*).

6. Semantic- phonemic error- real word bears phonemic resemblance to the target word (stair/*chair*).

7. Grammatical error- response deviates from normal only by alteration of grammatical form (girls/*girl*).

8. Preservation- inappropriate repetition of previous whole word utterances.

Addition errors

9. Word addition- add a single word within target sentence.

10. Phrase addition- add two or more words within the target sentence.

11. Sound interjection- an extraneous sound is added (*uh*).

12. Word interjection- an extraneous word such as *well* is added which is distinct from the words associated with the fluent text.

13. Phrase interjection- an extraneous, parenthetical remark such as *you know* is added, which is distinct from the words associated with the fluent text.

Omission errors

14. Word omission- one word is omitted within the target sentence.

15. Phrase omission- two or more words are omitted within the target sentence.

16. Word transposition- one word is switched with another or out of order in the target sentence.

Revision errors

17. Word revision- correct or incorrect revision at the word level (birth/earth).

18. Phrase revision- the content of the phrase is modified (They say/They heard him).

19. Word repetition- repetitions of single words (I-I-I).

20. Phrase repetition- repetitions of two or more words (They say/They say).

Jargon

21. Real word jargon- string of words which do not resemble the target sentence in content or grammatical structure (makes him money/*down-to-earth*).

22. Neologistic jargon- jargon is composed primarily of neologisms (slingshores forgim/*down-to-earth*).

Paraphrase error

23. Paraphrase- the content is similar to the target but the grammatical structure is drastically altered. (I left work and came home/*I get home from work*.)

Inadequate response

24. Inadequate response- the subject refused to respond.

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TEXTUAL VARIATION OF TOLKAPPIYAM (TŌLKĀPPIYA MŪLAM PAḌA VĒṚPĀḌUGAL: AINŌKKAYVU)

Eds. K.M. Venkataramaiah, S.V. Subramaniam & P.V. Nagarajan,
HB, Double Crown, pp. 460, Rs. 400/- (US$ 80/-)

This is a massive and accurate work which lists the variations in readings found in published works beginning from the 1847 palm-leaf manuscripts, especially from U.V. Saminatha Iyer's Manuscript Library, Chennai, from different interpretations found in the annotators beginning from *Iḷampuranar* of 12th century A.D., *Teyvacilayār*, *Cēnavaraiyar*, *Pērāsiriyar*, *Naccinārkkiniyar* and modern commentators like Balasundaram and others. The reasons for preferring one or the other reading are listed in the footnotes which are detailed. A total number of sutra-s which vary from one ancient annotator to another is also listed. An appendix containing the index of the first words of the sutra-s is also given at the end.

CALDWELL AND A.R. RAJA RAJA VARMA ON MALAYALAM GRAMMAR

K. Raghavan Pillai, 1/8 Demi, pp. 174, Rs. 250/- (US$ 25/-)

A comparative study of the views of two prominent grammarians, this work attempts to compare the views of Caldwell and Rajaraja Varma (A.R.) on Malayalam, its relation with Dravidian in general and Tamil in particular. The work aims to analyze critically the introduction (*Pīṭika*) by A.R. to *Kēraḷapāṇiṉīyam*, vis-a-vis an evaluation of Caldwell's views on Malayalam grammar and its development. The discerning critic will find this work informative and stimulating.

International Journal of Dravidian Linguistics

Notes & Discussions

VAṬṬEḺUTTU AND ITS CHARACTERISTICS

P. VISALAKSHY
University of Kerala

Among Grantha, *Vaṭṭeḻuttu* and Tamil the three ancient scripts of Tamiḻakam, the most ancient one might be *Vaṭṭeḻuttu*. In its early phase, it might have been in use in the entire Tamil speaking regions. Burnell expressed the view that *Tolkāppiyam*, Tirukkural and all other ancient Tamil works might have been written in this script[1]. *Vaṭṭeḻuttu* differs considerably from all other derivations of *Brāhmī* script found in the whole of India. That might be one of the major reasons for Burnell to state "It is, therefore, impossible to suppose that the *Vaṭṭeḻuttu* is derived from the South *Aśoka* character"[2]. However, he considers a common source for the origins of both the scripts and arrives at a conclusion that the South *Aśoka* and the *Vaṭṭeḻuttu* alphabets are independent adaptations of some foreign character (Semitic), the first to a Sanskritic language and the second to Dravidian language. According to him, *Vaṭṭeḻuṭtu* as independent from *Brāhmī* and this fact is evidenced by his statement "It is best to consider the *Aśoka* alphabets and the *Vaṭṭeḻuttu* as independent".[3] However, from the palaeographic studies it is proved that the source of origin of *Vaṭṭeḻuttu* is the *Tamil Cave Brāhmī* which in turn is a branch of Southern *Brạhmī*. Hence like other Indian scripts, *Vaṭṭeḻuttu* is also a descendant of *Brāhmī* script.

In early Jaina works like Bhagavati Sutta (5th century B.C.), *Samavāyāṅga Sutta* (300 B.C.) and *Paṇṇavaṇā Sutta* (168 B.C.), the names of eighteen scripts are given and *Dāmili* is one among them. The term *Dāmili* undoubtedly indicates Tamil/Dravidian. *Bambhī* (*Brāhmī*), Kharotti (*Kharoṣṭhī*) and *Yavanāni* (Greek) are also found in the list of these eighteen scripts. If *Dāmili* was an independent script like *Bambhī*, Kharotti and *Yavanāni*, it might have been subsequently lost having no traces left behind. So also, if *Dāmili* is an independent script unrelated to *Brāhmī* then *Vaṭṭeḻuttu*, a development from Southern *Brāhmī* cannot be considered as a descendant of *Dāmili*. Even then, one may have to suspect some substratum influence of *Dāmili* in the formation of *Vaṭṭeḻuttu* so as to make it so different from other varieties of *Brāhmī* script.

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[1] Burnell, p. 47.

[2] Ibid., p. 49.

[3] Ibid., p. 52.

Vaṭṭeḻuttu was found to be used in the entire Cera and Pandya regions i.e. in the whole of Kerala and in a major part of the present day Tamil Nadu. When Malayalam became a separate language around eleventh century A.D., in addition to Tamil it also became the script of Malayalam. Even though a fully developed system of *Vaṭṭeḻuttu* writing can be seen only from eighth century onwards it might have been in existence much earlier. The shape of *Vaṭṭeḻuttu* letters are rounded and it is generally believed that this script is named so due to the rounded shape of the letters. However, L.A. Ravi Varma holds a different view and states that its original name might have been *Veṭṭeḻuttu*.[4] According to him it is a chisel-type script and the term *Veṭṭu* denotes the incising or cutting with chisel on rocks, copper plates etc. and hence the correct name might be *Veṭṭeḻuttu* rather than *Vaṭṭeḻuttu*. In this connection, it may be noted that *Vaṭṭeḻuttu* cannot be considered primarily as a chisel-type script since the curved shape of the letters make it relatively more difficult for incising the letters with chisel. Its spread in the known period of history was mainly in Cera and Pandya regions and hence it was also referred to as *Cera-Pandya* script. Yet another name for it is *Nānam Mōnam*. At a later period, *Vaṭṭeḻuttu* was also known as *Tekkan Malayalam*.

Subsequent to the fall of Pandyas, Colas established supremacy over the Pandya territories (from eleventh century A.D.). The Tamil script used by the Colas gradually got acceptance in the Pandya territories and *Vaṭṭeḻuttu* was gradually replaced by the Tamil script. During this period the Cera empire got disintegrated and consequently the close contact once existed among the people of the Cera country began to loose and this separation was more between the people who reside on the east and the west of the Western Ghats. This facilitated to have more contacts between the people of the former Cera territories who reside on the eastern part of the Western ghats with the people of the former Pandya regions which resulted in the spread of Tamil script and the replacement of *Vaṭṭeḻuttu* in those Cera regions. Thus, *Vaṭṭeḻuttu* was gradually replaced in the Tamil regions and this process might have completed by about fifteenth century.

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[4] L.A. Ravi Varma, Introduction, p. i.

But *Vaṭṭeḻuttu* continued to be in use for writing Malayalam till the end of the eighteenth century. *Malayāṇma* and *Kōleḻuttu*, the two regional varieties of *Vaṭṭeḻuttu*, were in use for a still further period.

The most ancient inscription in *Vaṭṭeḻuttu* so far noticed according to Mahalingam is an epitaph of the fourth century A.D. at Tirunatarkundru and the second one in antiquity is a seventh-century epitaph written twice found at Tiruciirappalli.[5] The earliest known official records in *Vaṭṭeḻuttu* discovered hitherto are those of Pandya King Jatilavarma Paranthaka I who ruled during the eighth century A.D. The Tiruppurankundram inscriptions of Maranjadaiyan (770 A.D.) and Tirunandikkarai inscription of Vikramaditya Varaguna (893 A.D.) are also in *Vaṭṭeḻuttu*. There exists a good number of *Vaṭṭeḻuttu* inscriptions both in Kerala and Tamil Nadu. *Vazhappalli Śāsana* (832 A.D.), *Tarisappalli Śāsana* (849 A.D.), *Tiruvattuvay Śāsana* (861 A.D.), Chennamangalam records (9th century A.D.) and the Veeraraghava inscriptions of Kodungalloor (1225 A.D.) are all incised in *Vaṭṭeḻuttu*. The two *Vaṭṭeḻuttu* inscriptions recently discovered by Vedachalam at Tiruppuvanam Putpavanesvara temple near Madurai are of the tenth century A.D. The Suceendram inscription of Rajaraja I (999 A.D.) is also in *Vaṭṭeḻuttu*. Some such variations existed between the *Vaṭṭeḻuttu* of Pandy and Cera regions and some such variations have been pointed out by R. Krishnamurthy. From the *Vaṭṭeḻuttu* practiced in Kerala, two regional varieties known as *Kōleḻuttu* and *Malayāṇma* were developed. They cannot be considered as independent scripts but only as two subvarieties of *Vaṭṭeḻuttu*.

Kōleḻuttu

The *Kōleḻuttu* variety might have come into existence by about seventeenth century. Though there exists a few inscriptions, this variety is mainly found in the writings on palm-leaves. In the initial periods of its development, *Kōleḻuttu* was used by the Hindu Sovereigns for writing their grants and later it became more popular among the Mappilas (Malabar Muslims). Though not very popular it was found among the Muslims of the Northern Travancore regions and of the erstwhile Cochin State. *Kōleḻuttu* was in vogue among the Mappilas of Malabar till the end of the nineteenth century. It is said that the Mappilas of the regions in and around *Talaśśery* and Lakshadweep used this script till recently.[6] It is possible that the term

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[5] Mahalingam, p. 307.

[6] Diringer, p. 386.

Kōlel̲uttu might be to indicate the letters incised by long iron stylus called in Malayalam as *Nārāyam* or *Ezhuttāṇi*.

Malayāṇma

Malayāṇma is a regional variety of *Vaṭṭel̲uttu* used in the southern parts of Kerala. It is also known as *Malayāl̲ma*. When Malayalam became a separate language the *Vaṭṭel̲uttu* practiced in the Southern Kerala might have been named as *Malayāṇma* in order to assert the separate identity of Malayalam from Tamil. The records and correspondences of Travancore Government were in *Malayāṇma* up to 1819 and it was during the reign of Svati Tirunal Maharaja, the *Malayāṇma* script was completely replaced by Malayalam for official purposes. Though a few inscriptions existed in *Malayāṇma* like Munchiramatham plate, this script was mainly used to write on palm-leaves.

Characteristics of Vaṭṭel̲uttu

Vaṭṭel̲uttu system of writing has separate numeral symbols of its own and they do not exhibit much similarity with the common numeral symbols of Grantha and Tamil scripts, Voiced consonants and aspirated consonants do not have letters in *Vaṭṭel̲uttu* as they are not required for the Tamil language. But at the same time the four consonants *n̲, r̲, ḷ* and *l̲* which are peculiar to Dravidian are got represented in the inventory of *Vaṭṭel̲uttu* alphabets. In the case of vowels,letters are found for *a, ā, i, ī, u, ū, e, ai* and *o*. In early inscriptions letters are not found for *ē* and *ō* and these long vowels are indicated in *Vaṭṭel̲uttu* writing by the letters of their corresponding short vowels. Even in later inscriptions the distinction between short and long forms of the vowels *e* and *o* are found only in a very few instances and the general pattern is not to have such a distinction. To have no separate letters for all its vowels is quite uncharacteristic of a Tamil script especially when considering the fact that the ancient grammarians of Tamil have considered vowels as the soul of the language and the consonants only as its body (*uyirel̲uttu* and *meyyel̲uttu*). When consonants peculiar to Tamil language got representation in *Vaṭṭel̲uttu*, the absence of two vowel letters quite fundamental to Tamil stands unexplained. Though no separate letter is found for diphthong au, unlike e and o, it is not essential to Tamil language. In *Vaṭṭel̲uttu*, there is no subsidiary symbol to point out a pure consonant, i.e. a consonant without any vowel. Thus a pure consonant is always represented by consonant + *a*. The use of *anusvāra* in order to denote the first constituent nasal which is homo-organic to its succeeding consonant and also to represent word final m is unknown to the *Vaṭṭel̲uttu* system of writing. Instead of *anusvāra* symbol *Vaṭṭeḻuttu* uses the concerned nasal letter itself. Similarly separate forms are absent to indicate geminated consonants and clusters, In geminates and clusters the constituent consonant letters are written in full one after another in a linear way. In clusters and geminates, the subsidiary symbols of vowels are added to the last constituent and the preceding constituent or constituents are represented by consonant + *a*. When YC or YCC cluster occurs, in many instances, *y* is written with the vowel *i* and it might be a reflection of the pronunciation once existed in Tamil and Malayalam. For instance, the word *ceytu* may be found to be written either as *ceyatu* (*yt* cluster) or as *ceyitu* (*y*+*i*). The *Vaṭṭeḻuttu* pattern of writing can be illustrated as follows:

Vaṭṭeḻuttu pattern	**Word/words (Malayalam)**
paḻama	*paḻam, paḻama*
karayāma	*karayām, karayāma*
kamapama	*kampam*
taṉata	*taṉta*
maṉatu	*maṉtu*
kaṇaṭana	*kaṇṭan*
añacu	*añcu*
paṅaku	*paṅku*
pāla	*pāl, pāla*
vāḷa	*vāḷ, vāḷa*
cakaka	*cakka*
kaḷaḷi	*kaḷḷi*
kolalama	*kollam*
koyatatu	*koyttu, koytatu*
ṉerama	*ṉēram, ṉērma*
peyatu	*peytu*
peyana	*pēyan*
keṭu	*keṭu, kēṭu*
orakaku	*ōrkku, orakku*
kota	*kota, kōta*

From the different possibilities of reading, the words occurring in Malayalam language alone are given in the above illustrations.

From the example cited, it is possible to get some idea regarding the extent of difficulties one can encounter in the reading of *Vaṭṭeḻuttu* records. In addition, the subsidiary symbols of vowels used in consonant vowel combinations do not show any regularity and this also creates problems in the proper deciphering of letters. Yet another problem of *Vaṭṭeḻuttu* is the existence of letters having similar forms to represent different sounds. This problem is more when subsidiary symbols of vowels are added to the consonants than the forms representing consonant +*a*. For example the forms between *pa* and *va*; *ṉa* and *ya* are in many instances written alike. Similarly, in a few *śāsanas*, letters for *ka* and *ca* also show close resemblance. This closeness in the shapes of letters is more in *Kōleḻuttu* and *Malayāṇma* varieties. May be due to such various types of deficiencies, Burnell considers *Vaṭṭeḻuttu* as an imperfect alphabet.[7] It is to be admitted that this archaic script of the Tamil language is not in consonance with the proven genius of the ancient Tamils. These imperfections of *Vaṭṭeḻuttu* might be the reflections of certain characteristics of primitive stage of the development of writing in ancient India. Though inadequate, the Tamils instead of discarding these probable remnants of archaism, might have retained them through *Vaṭṭeḻuttu*. Some of the characteristics of *Vaṭṭeḻuttu* are found in Tamil and Malayalam scripts. A few structural characteristics such as the pattern of representation of geminates and clusters and the absence of *anusvāra* can be seen in Tamil script. Malayalam has borrowed the *Vaṭṭeḻuttu* numerals in toto. Both in Tamil and Malayalam, letters for the consonants peculiar to Dravidian are the retentions from *Vaṭṭeḻuttu*.

Even with all these imperfections, *Vaṭṭeḻuttu* has a special status among the ancient Indian scripts. It has a known history of about one thousand five hundred years, may even go back further, and is one of the most important scripts both from the historical and palaeographic points of view. As it is the most divergent script of the *Brāhmī* offshoots, the reasons for such a divergence are of paramount importance to the researchers on the development of Indian scripts. A systematic study of *Vaṭṭeḻuttu*, both from the historical and Palaeographic angles, it is hoped, will throw light on many of the unsolved problems in Indian Palaeography. Though a lot of inscriptions are found in this script, most of the palm-leaf manuscripts written in this script are lost due to elapsing of time and in this connection it may be noted that usually a palm-leaf manuscript in South India can be preserved safe only for about five hundred years. *Vaṭṭeḻuttu* was the most preferred script of the rulers of Cera and Pandya kingdoms for a considerable span of time and hence, the records in this script are most valuable for the political, social and cultural history of South India. But unfortunately no exhaustive study on *Vaṭṭeḻuttu* has come out so far and it is hoped that in future more attention will be given to the study on *Vaṭṭeḻuttu*..

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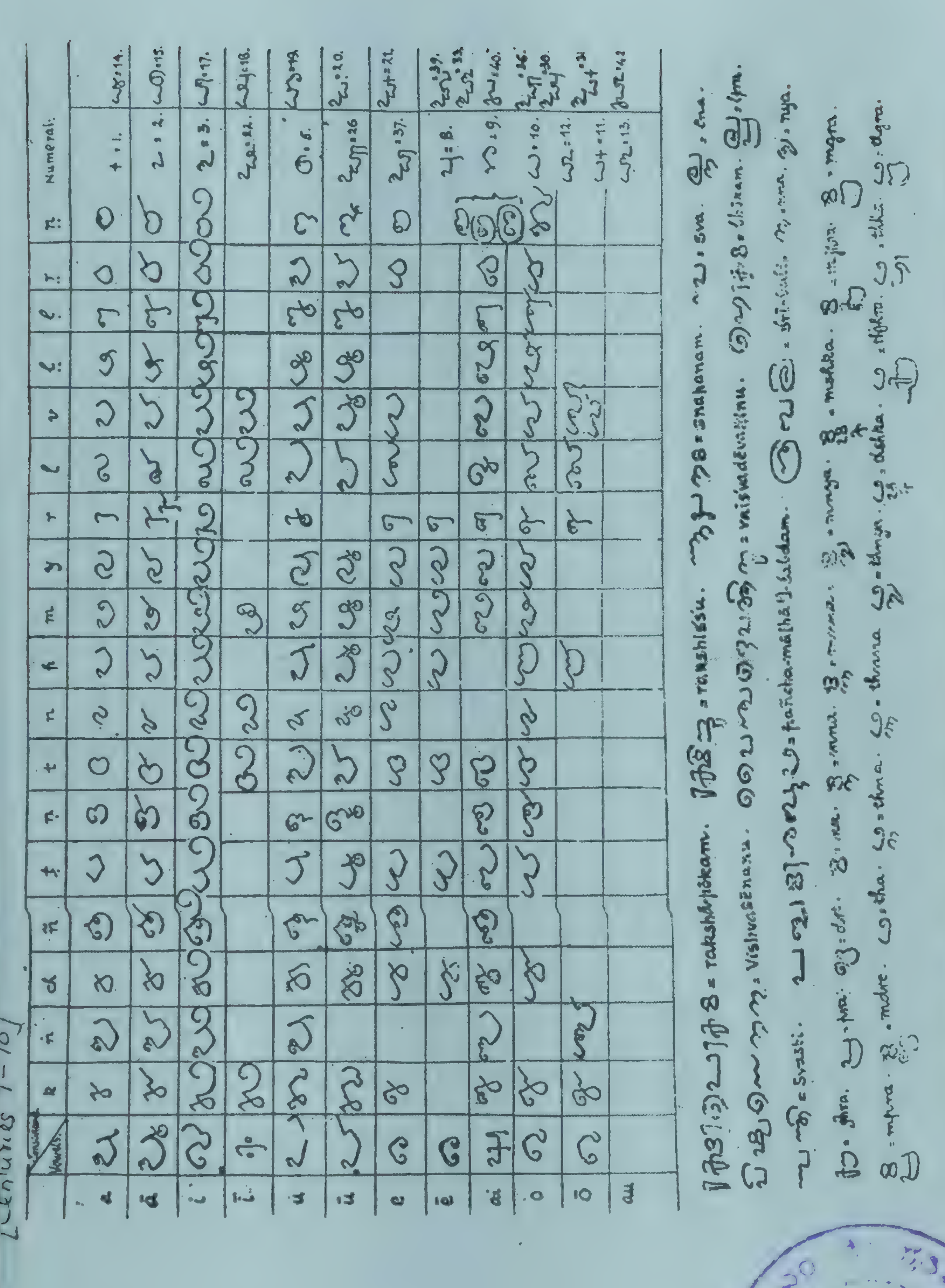
7. Burnell, p. 49.


Centuries 7-10
Consonants
Vowels
Numerals:
a
ā
i
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ū
e
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p
m
y
r
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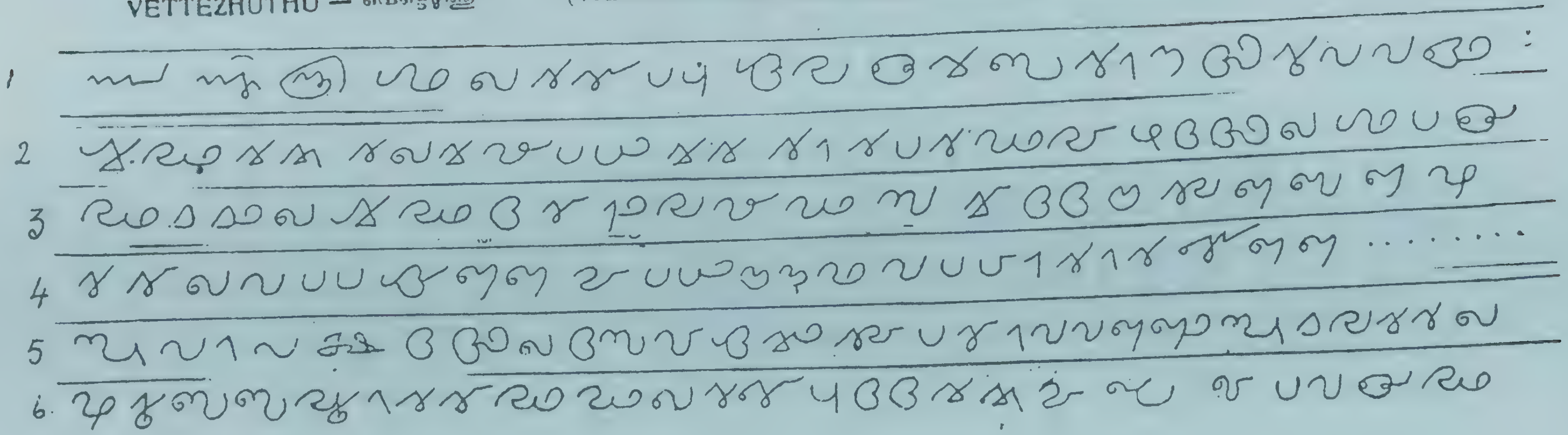
v
ḻ
ḷ
ṟ
ṉ
takshipakam
takshisu
snakonam
sna
ena
Vishnusenanu
vaisvadevitanu
dram
svasti
pañcamahasabdam
srivalli
nya
mra
dri
mokha
mgra
mpra
mdre
dkha

Table showing the letters of the Vatteluttu Alphabet in the Huzūr Treasury Plates

VETTEZHUTHU — വെട്ടെഴുത്ത്   (Travancore Rock Inscription = തിരുവിതാംകൂർ ശിലാലേഖ.)



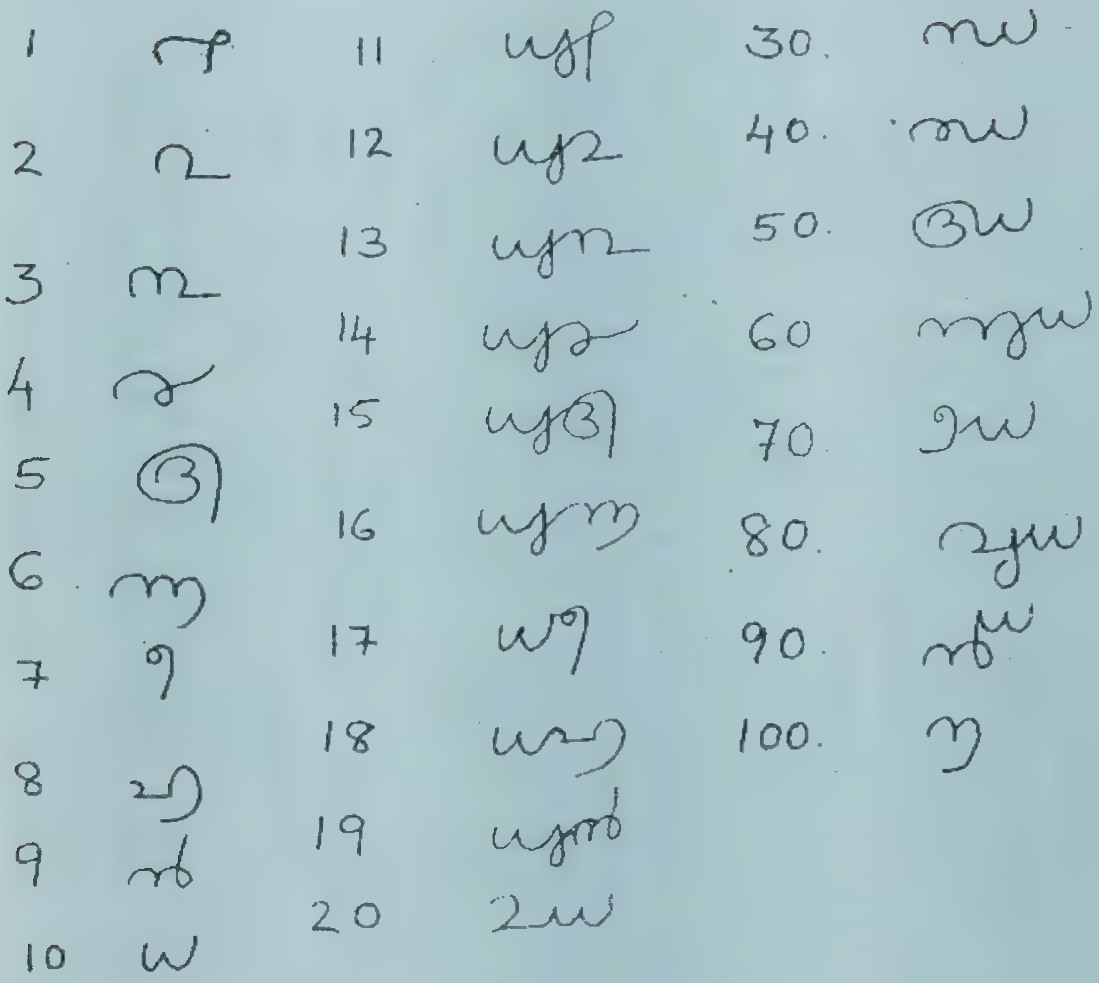
Vaṭṭeḻuttu

Travancore Rock Inscription

Transliteration 1	sva sti śrī	me la ka kā ṭa ṭu	te ya ña ca ṅa ka ra na	ti ru pa pa ṇi		
Reading	[1]svastiśrī	mēlkkāṭṭu	tēyañcaṅkaran	tiruppaṇi		
2	ce yi ca cu	ka la ca mā ṭa ṭi ca ca	ka ra ka ṭa ka	vi yā ḻa ta ti la	me ṭa	ñā
	[2]ceyiccu	[3]kalacamāṭṭicca	karkaṭaka	[4]viyāḻattil	mēṭa	ñā
3	yi ṟa ṟi la	ce yi ta	kā ri ya mā vi tu	cā ta ta na	ku ḷa ṅa re	mu
	yiṟṟil	[5]ceyita	kāriyamāvitu	cāttan	[6]kuḷaṅare	mu
4	ka kā la	va ṭa ṭa to ḷa ḷa	ṉā ṭa ṭi na nu ma	pa ṭa ṭā ra ka ra ka ko ḷa ḷa		
	kkāl	[7]vaṭṭatoḷḷa	ṉāṭṭinnum	paṭṭārakarkkoḷḷa		
5	a pa ra pa kṣa ta ti la	ta tu vā te ci	kū ṭa kā ra pa pa ḷa ḷi	a ṟa ya ka ka la		
	aparapa[8]kṣattil	[9]tatuvāteci	kūṭakārappaḷḷi	aṟaykkal		
6	mu ru ṅa ṅa yū ra ka kā yi	vi la ka ko ṭu ta ta ca cu	ṉā lu	i ṭa va	ñā yi.....	
	muruṅṅayūrkkāyi	vilakkoṭuttaccu	ṉālu	iṭava	ñāyi.......	

1. first three letters in Grantha script. 2. ceyyiccu 3. kalaśamāṭṭicca 4. vyāḻattil 5. ceyta 6. kulaṅṅare
7. vaṭṭattoḷḷa 8. kṣa in Grantha script 9. dvādaśi

Vaṭṭeḻuttu Numerals



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International Journal of Dravidian Linguistics

Notes & Discussions

APROPOS OF THE MUGDHABODHA SYSTEM OF GRAMMAR

JNANANKASEKHAR MISRA

The oldest form of Indo-Aryan language rests in the Vedas. The precise way of formulating the strings of deliberation was devised by the intellectuals through the grammar leaving the scope of dialectal variations outside the jurisdiction of standard speech. The *Ṛk Saṁhitā* including Brāhmaṇa and *Āraṇyaka* supplies so many instances of morphological study of language quite relevant from the grammatical point of view. (cf. *catvāri śṛṁgā trayo'sya pādā...*)

The advent of *Pāṇini* in the firmament of Sanskrit grammar is an epoch-making event as he recorded the language restraining its abrupt change in usage. His grammar goes by the name of *Aṣṭādhyāyī* or *Aṣṭaka* where *Pāṇini* fully utilized the *anukramaṇīs* of the greatest value of ancient sages adding to and modifying them according to his own need. So it was the grammar of both the vedic and the standard popular dialect of Sanskrit of his time.

In this discourse I shall have to switch over to Mugdhabodha system of grammar, the masterpiece of Vopadeva taking *Pāṇini* as pole-star in the domain of grammar. The system is not that popular now-a-days. But its contributions to study on Sanskrit language are great.

The Mugdhabodha grammar written in the last days of Hindu independence in 13th century A.D. was initially a school book as the primary aim and object of writing the particular grammar was brevity. To fulfill the objective the author adopted a path of economy of syllables and simplicity coupled with brevity. To acquire knowledge of the then predominant grammar of *Pāṇini* was a tough job indeed for its extensive scope designed by cryptic style. So the necessity was felt for an easier process by appliance of technique so that knowledge of grammar may be acquired in a simple way. To quote *Viṣṇuśarman* in *Pañcatantra*:

'anantapāraṁ kila śabdaśāstram...'

Vopadeva in this juncture and rich heritage shouldered the responsibility and reduced grammatical technical terms into algebraical form by adopting in most cases monosyllabic terminology with categorical definition and relevant *vṛtti* at the beginning of each and every chapter. For example : *li* for *prātipadika*, *da* for *pada*, *sva* for *hrasva*, *rgha* for *dīrgha*, *uṅ for upadhā*, *ka* for *kāraka*; *gi* for *upasarga*, *kī*, *khī*, *gī*, *ghī* etc., for *laṭ*, *vidhiliṅ*, *loṭ*, *laṅ* etc. respectively in conjugational endings, *gha*, *ḍha*, *dha*, *bha*, *ja* and *ḍa* for *kartā*, *karma*, *karaṇa*, *sampradāna*, *apādāna* and *adhikaraṇa kārakas* respectively. *ca*, *ha*, *ya*, *ṣa*, *ga* and *va* for *dvandva*, *bahubrīhi*, *karmadhāraya*, *tatpuruṣa*, *dvigu* and *avyayībhāva* respectively in samasa and so on. Thus economy of syllables was effected at ease. In Mugdhabodha novelty lies in arrangement of 1,185 *sūtras* for an entire system of grammar while *Pāṇini* left roughly about 4,000 rules for his *Aṣṭādhyāyī*.

It is common that five types of supplementary treatises viz. *sūtrapāṭha*, *dhātupāṭha*, *gaṇapāṭha*, *uṇādipāṭha* and *liṅgā*nuśāsana are inevitable for formation of a grammar. But later scholars came to formulate the rest and added them to the system. We may refer to two illustrious commentators of this system namely *Rāmatarkavāgīśa* and *Durgādāsa Vidyāvāgīśa* who supplemented the need of the readers intending to have an extensive knowledge of the language. The commentators not only plugged the loopholes unattended to by the formulator himself but also added to the original pool by collecting from neighbouring systems. By this process of deliberation the original text was enriched to a large extent.

Once upon a time this system was favourite to the Sanskrit-knowing people all over India. Because Vopadeva was the man who got the privilege of giving sectarian turn to his Mugdhabodha and attracted readers by citing illustrations of grammatical usages which he collected from socio-cultural and religious sources. Sometimes the author presented the illustrations in pithy verses to go through the intricate subject like grammar in a pleasing manner. The rise of some other schools of grammar in the 16th century has confined it locally to the both sides of Hooghly in Bengal.

Contribution of Vopadeva to the development of *Pāṇinian* school is not at all negligible. As the arrangement of topics in Vopadeva is more convenient and easier to accept by the learners, *Bhaṭṭoji Dīkṣita* adopted it and rearranged *Pāṇini's sūtras* strictly according to that process with a *vṛtti in his Siddhānta Kaumudī*. *Dikṣita* brought a change in *Pāṇini* and impeded the currency and spread of Mugdhabodha.

One point more. *Pāṇini's* work was known as '*Vyākaraṇa-Vedāṅga*' as it dealt with both vedic and classical Sanskrit *(laukikānām vaidikānāñca)*. Post-*Pāṇinians* generally address themselves to classical Sanskrit only though they deal with Vedic and *Prākṛta* sections side by side, for example - *Kātantra*, *Saṃkṣiptasāra* etc. Mugdhabodha in this respect is an exception in this that it nowhere refers to the Vedic language.

Influence of Mugdhabodha was so predominant in Bengal that Rādhākānta Dev Bahadur refers to Mugdhabodha off and on in his encyclopaedic work '*Śabdakalpadruma*' and explains the monosyllabic technical terms as well as anubandhas in the preface with great importance. Later on *Drutabodha, Drutabodhinī, Āśubodha, Śīghrabodha, Prakriyārṇava, Kārikāvalī, Dīpavyākaraṇa* etc. were written in Bengal with the help of Mugdhabodha as the source material.

Some distinctive features of this system may be cited in a nutshell.

i) This is a grammar in which the author formulated the *sūtras* and delivered himself the *vṛtti for each and every sūtra*. Ambiguity in most cases has been overcome by such an attempt of the author himself.

ii) The author arranged properly the necessary technical terms at the beginning of each and every section with definition thereof.

iii) The technical terms are mostly monosyllabic in nature. For example *li* for *prātipadika*, *ra* for *sārvadhātuka*, *gha* for *kartṛ*, *ja* for *apādāna*, *ḍa* for *adhikaraṇa*, *ṣa* for *tatpuruṣa*, *ga* for *dvigu*, *va* for *Avyayībhāva* etc.

True, *Pāṇini* also used such terms as *bha, gha, ghi, ṭi* etc. but then he accepted even such large polysyllabic terms as *sārvadhātuka* ('ra' according to Mug), *savanāmasthāna* ('ghi' in Mug.), *samprasāraṇa* ('ji' in Mug) and so on. No such *mahāsaṃjñā* is ever found in Mugdhabodha.

iv) Of course, Mugdhabodha has some peculiar compound technical terms viz *'li-dhu'* to indicate *nāmadhātu*. In case of *pratyāhāra* Vopadeva uses *'vrit* $\{(v+ṛ)+it\}$ *(s.464), 'yut' (i+ut) (s.122, 174), 'yū' (i+ū) (s.122)* etc. which are the combinations of two or more sounds together.

v) 'Pha' (consonant and *virāma* according to *Pāṇini* i.e. cessation or absence of succeeding letter) is a unique one.

vi) For brevity Vopadeva clubbed some *Pāṇinian* rules in a single one. For example:

Mug. 430 is the combination of 18 *Pā.sūtras*,

Mug. 447 is the combination of 17 *Pā.sūtras*,

Mug. 434 is the combination of 14 *Pā.sūtras*,

Mug. 416 is the combination of 14 *Pā.sūtras*.

On the contrary, in a few cases a single *Pā.Sūtra* (7.1.18) is seen divided into two rules (Mug. 150.151).

vii) As regards consequential results of euphonic combination Mugdhabodha sometimes differs from the *Aṣṭādhyāyī*. Thus the case of *san + acyutaḥ* = *sannacyutaḥ* is a case of nasal augmentation *(nuṭ āgama)* according to *Pāṇini*, but Mugdhabodha treats it as a case of germination (ditva) of the nasal consonant. Similar is the case with *gaurīcchāyā, śivacchāyā* etc.

viii) In declension of '*Rāma*' we have *rāmāya* and *rāmābhyām* etc. where '*a*' becomes *ā'acc*, to Mug. (109, *ā ktimabhavi)*, while *Pāṇini* treats this as a case of lengthening.

ix) *Pāṇini* employed certain rules for formation of verbs by adding inflexions to 18 basic ones, but Mugdhabodha by accepting all the inflexions separately has simplified the process.

x) (a) Novelty in interpretation lies in Mugdhabodha in case of *'bhavate dhanam dhīraḥ'*. The root √ *bhū* may be conjugated in both active and middle voices e.g. *bhavati/bhavate, bhavataḥ/bhavete*, if it signifies *prāpti* as in the examples given above. *('bhuvaḥ prāptau vā mam'-Mu. 545)*. But the *Pāṇinian school admits middle conjugation of this root only when the root is admitted to tenth class of conjugation (curādi)* with scope of affixation of *ṇic* as an alternative phenomenon in the non-causative sense, e.g. *bhāvayate/bhavate*.

(b) In case of *bhavaṇti Pāṇini* admits a + a = a by the rule '*ato guṇe*' (*Pā* 6.1.97) e.g. *bhav-a-anti* > *bhavanti* but according to Vopadeva the precedant 'a' vowel here is elided if it is followed by either 'a' vowel or 'ec' (*'lopo' to 'decoḥ' Mu 544*). This point of elision in this case in Mugdhabodha is definitely a mark of distinction.

xi) The arrangement of topics in this grammar is peculiar and reader-friendly.

xii) Peculiarity in setting examples.

In most cases the author cites the examples himself in the style of composing verses indicating so many names of Lord Hari or Hara. The lucid style of this exposition may be adopted as a memoria technica and makes the grammar a congenial study.

From this discourse it is evident that a critical study of this system is a rewarding venture in any enterprise of language analysis and planning.

In fine, we may quote from the concluding part of the Mugdhabodha declaring the necessity of study of the particular system:

gīrvāṇavāṇīvadanam mukundasṃkīrtanañcetyubhayaṁ hi loke/
sudurlabhaṁ tacca na mugdhabodhānna labhyate'taḥ paṭhanīyametat//

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A SHORT NOTE ON C/S > t CHANGE

V.I. SUBRAMONIAM

Kavimani Desikavinayakam Pillai, a distinguished poet in Tamil had an abiding interest in epigraphy, rare manuscripts and in the history of Travancore in general and Nanjilnadu, which covers a major portion of the fertile lands of Kanyakumari District, in particular. Kavimani's papers published in several journals in English and in other languages are now collected in two volumes by A.K. Perumal and Srikumar under the caption, *Kavimaniyin varalarru aayvukkutturaikal* (The articles on historical research of Kavimani), 2001.

In one article *Mutaliyār vīṭṭu ōlaiccuvaṭikaḷ*, Kavimani gives the texts found in the palm leaves collected by him. Incidentally the Mudaliars were earlier representative of the Vijayanagar Kings of Madurai, residents at Alagiapandipuram about 8 km. from Nagercoil. All happenings in the Travancore palace are reduced to writing on palm leaves and sent to him. The survivors who are few now, are in distress. Analyzing the language data of the palm leaves, some interesting features in orthography are found, especially for *c/s* becoming *t* and mostly initially and, in a few cases medially.

E.g.	*saṅkaḍam > tankaḍam*	'distress'	pp. 87, 88, 89, 90, 92, 105, 108
	saṅkeetam > tankeetam	'gathering'	pp. 83, 84
	salliyam > talliyam	'truth'	p. 138
	prasavikka > pratamikka	'to deliver'	p. 96

The change of *s > t* is noticed in the northern dialect of Malayalam especially of the Ezhavas and in Ramacaritam - the earliest text of Malayalam of the *Pāṭṭu* School. It was then surmised that this change is limited to the northern area of Kerala and was commonly used by the lower caste speakers of Malayalam.

In a detailed and well-formulated article by A. Govindankutty in 1986, he also argued that it is an areal feature comprising of Tulu, Badaga and the northern Malayaḷam dialects and found in abundance in the early Malayalam work called Ramacaritam of the *Pāṭṭu* School with the use of extensive Tamil forms. This work is considered to be a product of the northern Malayalam dialects according to him.

But in Southern Travancore area with Padmanabhapuram and later Trivandrum as the seat of the King, the orders of the King were written by the palace scribes where the change of *ċ* > *t* is found. Of course most of them are in I.A. loan-words. This sound change is intriguing. The dialect of South Travancore was and is Tamilized. So also the text of Ramacaritam . This will lead one to guess that the change was common in the Tamilized dialect of Malayalam. One point against the hypothesis is that the Ezhavas and other communities, which preserve this change, are not bilinguals. They have the least contact with Tamil. At best one can say that the lower the community, more will be the Dravidian features preserved by that community. *c/s* > *t* can be an early Dravidian feature preserved in the dialects of lower communities, in the Tamilized text of Ramacaritam and in the South Travancore dialect.

Since the palace scribes are members of the higher (non-Brahmin or Brahmin) communities to be near to the sovereign to take his orders and reduce them into writing, the sound change of *c/s* >*t* cannot be considered to be used by the lower communities. Thus, the earlier hypothesis needs to be corrected due to the occurrence of *c/s* > *t* change found in the text mentioned above.

Another change of *ḻ* > *t* which is also not few in the text referred to, needs also a separate treatment.

E.g. *īḻu* > *ītu*	'seven'
kiḻamai > *kitamai*	'week'
maḻa > *mata*	'rain' etc.

JAINISM IN SOUTH INDIA

Ed. P.M. Joseph, HB, Demy 1/4, pp. 460, Rs. 1,000/- (US$ 125/-)

This book, in two parts, covers everything connected with Jainism - its origin, growth, decline and residual survival in South India. While the first part is the assessment of the contribution of South Indian Jainism, the second deals with its overview. Both are complementary, the second one enabling the understanding of the first. The work clearly illustrates how Jainism became dominant in the South.

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PLEISTOCENE HUMAN FOSSIL WITHIN THE FERRICRETE

P. RAJENDRAN
University of Kerala

The prehistoric site at Odai in Bommayarpalayam of Villupuram district in Tamil Nadu was discovered by me in March 2000, and at that time several mesolithic artifacts, fossilized wood and animal bones were collected from the surface of the aeolian deposit. The site lies hardly one kilometer inland at an altitude of 12 meter above the sea level (Pl.1). Several layers of sand and gravel were seen in the vertical section of the aeolian deposit along with the stone implements. Owing to the importance of stratigraphy and the Stone Age industry I decided to go for the excavation and thus requested to the A.S.I. for the excavation license.

The excavation was conducted in October, 2001 following the receipt of the excavation license from the Archaeological Survey of India. Being a joint work Mr. S. Krishnamurthy an Archaeological Officer of the Tamil Nadu Directorate of Archaeology at Chithambaram was present with me during the work. Prof. Dr. K.S. Mathew, the former H.O.D. of the Dept. of History in Pondicherry University and the present H.O.D., Prof. Dr. L. S. Viswanath of the same department had visited the site. Besides them I had two well experienced excavators - Mrs. George Kutty & Thomas Kunnikal from Kerala for the work.

During the vertical excavation layer by layer step cutting was done for proper examination. A total depth of 6 meter has been exposed in which up to 5.7 meter depth 9 layers were identified. With in the 9 layers 5 layers of sand, and four layers of sand and gravel were well discern, and were found intermittently. At the bottom below 6 m. beginning of ferricrete has been noted and it continues further below reaching the present sea-level.

Two Stone Age Industries viz., Mesolithic and Upper Palaeolithic were identified. Both the industries consist exclusively of quartz implements. A few Upper Palaeolithic artifacts are made of fossil wood. Besides the stone tools a large number of semi-fossilized animal bones and wood fossil pieces were also found along with the Mesolithic industry. Nature of implements clearly indicates the utilization of river-worn quartz as the main raw material during the two cultural phases. Mesolithic implements were found at 1.5 m. depth in stratified context while the Upper Palaeolithic implements were at 4.5 m. depth. The artifacts were also found at the lower level in the eroded deposit (Pl. 2 - 3).

During the work on 14th October, 2001 at 12.50 p.m. I discovered a fossilized human skull within the ferricrete which is seen slightly away from the excavation site. From the nature of occurrence of the ferricrete around the fossil, it seems that nearly two meter ferricrete had been earlier removed from its top. A little part of the fossilized material was exposed at the top. Since it was fully red stained its difference from the surrounding was not so conspicuous. There fore, I decided not to extricate the fossil from the hard matrix. Instead, I dug out the entombed fossil along with the hard laterite which surrounds it. Thus the fossil was lifted from the site for further studies (Pl.4).

Hundreds of fossilized human skulls ranging from a few lakh to over 5 million years old are known from different parts of the world, and most of them were found in various deposits in stratified context. However, none of them was found within the ferricrete (secondary laterite) and, therefore, they could be retrieved without much damage. It is for the first time that a human fossil has been found entombed any where in the hard ferricrete, there by blasted the general belief that no organic substance survive during ferricretization.

The normal palaeontological approach to this sort of discoveries is to extract the fossils in entirety from the matrix. But in this case it could not be taken out from the matrix thereby put in greater difficulty in understanding its morphology, identification, orientation etc. The next attempt was to explore the methodology in the study of the entombed fossil. Since no precedence was known to study such a specimen it was decided to reconstruct its morphology in full by using technologies such as X-ray Computed Tomography (CT), 2 D & 3 D Scanning which are used for medical purposes.

Initial attempts were with X-ray Computed Tomography (CT) at the Kumar Hospital in Kollam to spot the fossil inside the nodule. The Computed Tomography X-rays were passed into the specimen from all 360° and detected by a row of detectors in the opposite side. The difference in the density of the material is reflected as the difference in the intensity of X-ray. This difference is projected as an image by a complicated reconstruction algorithm. Thus an oval structure surround by the hard matrix has been well identified and it has confirmed the existence of a human fossil within it. Then the scanning technique (2D) AP Scanogram slice from above, AP Scanogram with image planes, Cross Sectional images, and lateral

Scanogram viewed from side were carried out. These analyses have shown, for the first time, several human cranial features on various images.

However, search continued since several points on its full morphology and orientation remained inconclusive from the 2 D images. At that time a piece of recent literature regarding the Herefordshire fossils 3D morphology reconstruction was obtained from the Internet. According to the literature, theoretically it is possible to image the fossils inside their nodules using technologies developed for medical scanning. Some of these include Magnetic Resonance Imaging (MRI), X-Ray Computed Tomography (CT Scanning), and Scanning 2D and 3D etc., which are highly expensive. This shows that the medical methodologies such as the CT and the 2 D scanning carried out earlier are correct.

Magnetic Resonance Imaging can work only with fluids and is thus of no use for the investigation of material like solid fossils. In this case the X-ray Computed Tomography and 2D Scanning have already been carried out. Now only 3D Scanning method remains to be applied which is best suited for reconstructing the full morphology of the entombed fossil. Even though the resolution of the current medical CT machine is relatively low, CT works by passing X-rays through the sample from many different angles, using different densities, help in spotting fossil inside the nodule. Scanning the specimen through 2D and 3D is best for reconstructing the full morphology of the entombed fossil. Though these techniques are very expensive to work with, the morphological information obtained through the three-dimensional image is much more than that in an equivalent two-dimensional one.

At a 3D scanning facility in the Upasana Hospital at Kollam, in order to extract all the cranial features of the fossil, the Scanning in thin Helical run (3 x 4.5mm) of the entire specimen on different plains had been carried out and reconstructed at 2mm interval.

The Scanogram shows a hemi-spherical solid object with a spherical object with in it with a few lucent areas. Serial axial section shows the same hemispherical solid object with a central slightly hypodense ovoid - spherical object having air containing clefts within it (Pl.5). The spherical object is covered by a fossilized structure measuring 1-2 mm which has been later identified as the fossilized skull having the CT attenuation of 1192 HU (Hounsfield Unit). The CT attenuation of the ovoid-spherical object ranges from 1,137 - 1,765 HU while that of the outer rock has the CT attenuation ranging from 1,628 - 2,383 HU. These studies have been repeated on many planes at different angles in order to understand its orientation, morphology, state of preservation etc. The morphology and the other features of it could be reconstructed through the Helical CT of the specimen in 2 mm spacing, and could see its orientation. Milk teeth within the mandible and maxilla have been noted. The length and breadth of the cranium are measured to 10.1 cm and 8.6 cm respectively, and it has the cranial capacity of 312 cc.

These studies have proved beyond doubt that it is a complete human baby skull of less than five month of age which got embedded in a fluviatile deposit in the geological past. The matrix is fully ferricretized and the skull is well fossilized. The characters amply prove a greater antiquity for the human fossil - The Laterite Baby. It may either belong to Middle or Upper Pleistocene in age, representing probably the Homo erectus or Homo sapiens (archaic) in the Hominid evolution.

Acknowledgement

This discovery is one of the greatest achievements in my research carrier since 1974 and it has become possible due to the continuous help and encouragement I have been receiving from the University Grants Commission, and I am highly indebted to the Commission. My Sincere thanks are due to the former Prof. & Head Dr. K. S. Mathew, of the History Dept. in Pondicherry University for the help.

A HANDBOOK OF WEST BENGAL (2 volumes)

Ed. Sanghamitra Saha, HB, Demy 1/4, Set, Rs. 1,750/- (US$ 220/-)

Volume I: This volume deals with the background of the study, land and population, history, religion, folk culture and social life of the people of West Bengal. It covers both western and eastern regions of Bengal. This thematically-arranged information-packed volume is well-documented.

Volume II: This volume has 10 chapters: Economy, Language and Literature, Educational System, Art, Media, Intellectual Achievements, Administration, Cultural Contact, Important Personalities and Places of Interest. Of them, some are fascinating, like the last one that brings before the readers a panoramic view of the different places and their natural environs. Similarly, the chapter on cultural contact covers the relation between Bengal and her neighbours, as well as the distant South, in a picturesque description.

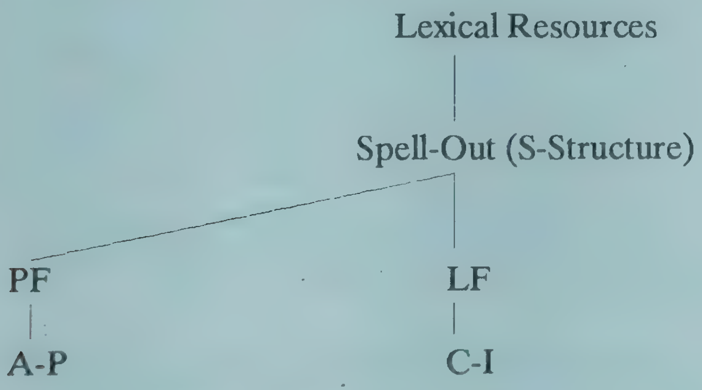
Moderately priced, both volumes have many pictures. A comprehensive index covering the 2 volumes is given for ready reference.

Notes & Discussions

CHOMSKY'S MINIMALIST CONCEPTION OF LANGUAGE: A THOUGHT

P.P. GIRIDHAR
CIIL, Mysore

Noam Chomsky's Minimalist conception of grammar is interesting. It looks upon grammar as phonetically and semantically interpretable computation, the interpretation levels interfacing with the A(rticulatory)-P(erceptual) and C(onceptual)-I(ntentional) Performance systems. The native speaker selects objects from her lexical resources, Merges them, and traversing a process of overt syntax, arrives at Spell-Out where S-S(tructure) is defined and which is subject to L(ogical) F(orm) and P(honetic) F(orm), the former interfacing with the Conceptual-Intentional performance system and the latter with the Articulatory-Perceptual performance system.



If I understand this conception correctly, I find aspects of it discrepant, anomalous and puzzling. First of all, LF and PF cannot be on par. PF must be the last stage before language is realized; and while the interpretation level of LF and the interface system of C-I may be seen as related but discrete, the same cannot be said of PF and A-P. PF and A-P are one and the same. Further it is said that the way it is structured, Chomsky's conception of grammar explains what happens in telepathy and in the deaf-mute's mind. Assuming that telepathy and the deaf-mute's thought-processes entail linguisticised rather than nonlinguistic thought, telepathic units of communication and the deaf-mute's linguistic cerebrations must be semantically interpreted objects. Only, they are short of articulatory interpretation.

My substantial objection to the Minimalist or indeed to any of its predecessors is not the above. It is that it is a description/explanation of what happens in neither the speaker's nor the listener's brain. A Positron Emission Tomogram would show that a nonlinguistic thought that would arise in the speaker's brain would 'evoke' its linguistic embodiment. The process of linguistic expression or embodiment would start out, let's say, with the selection from the speaker's Lexical Resources and going through an overt syntactic process, arrives at Spell-Out which is subject to LF and C-I before finding utterance in PF:

NLT -> LR -> SS -> LF -> C-I -> PF

Or, is C-I closer to NLT than to LF? This is the story of the (encoding) native speaker. In the case of the (decoding) native listener, presumably the following happens:

PF → CI > LF > SS > LR > NLT
(Given)

Technologies like PET would allow one to work out the details of what goes on with greater accuracy. The point of this squib in the gross is that the Minimalist conception captures what happens in neither the speaker's brain nor in the listener's brain, that the ordered sequence of its components has no empirical basis in homo loquens. That it exists at an abstract level and that it is NOT and NEED not be a replication of the sequencing in space and time of empirical reality doesn't wash, it seems to me. The transition from reality that leads to an abstract empirically nonrecognisable nonreplicable generalization must be explained. Like the explanation, for instance, of morphing of the VSO order from an apparent SVO order in English. I am aware that only a book-length exposition can do justice to the apparently ambitious thesis of this note. However a reflection which foreshadows such a detailed disquisition with PET scans and all need not remain unexpressed, need it?

The present writer is like a traveller who is irritated by the differences he finds between a map and the actual reality it represents like the different colours and shapes, of objects and the scaling etc., one might say. Whatever the differences between a map and the actual reality it is supposed to represent, there are things one simply cannot have on a map. One can't have for instance distortion of direction unless it is warranted by the one-dimensional nature of the medium of the map. Places that are in the west on the ground must appear on the map to the west of places that are on the east. In the name of abstracted representation, one can't have otherwise, and explain the variation in the legend. The Minimalist conception may well be right, but the reasoned path that led from the empirical reality of what in fact happens in a native speaker/hearer to the speaker/hearer-irrelevant abstraction NEEDS to be shown. That I am afraid has not been done.

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FUNCTOR-DELETION

J. NEETHIVANAN
Madurai

The essential grammatical tenor of a language and the key differences between the grammatical systems of different languages, according to Hockett (1958:265), lie in what is called the 'grammatical core'. This means, for any language, (1) its parts-of-speech system, (2) its grammatical categories, (3) its functors and (4) its construction-types and constructions. In order to define the functors, he split the total stock of elementary forms of a language into two unequal portions as (1) grammatically unimportant and (2) grammatically important. The deletion of any or two forms from the first portion would leave the grammatical system of the language essentially unchanged; the deletion of even a single item of the second kind would have drastic consequences. The first kind is named 'contentive' and the second one as 'functor'. Hockett demonstrates the significance of the functors with the following sentence whose grammatical skeleton was taken away by Lewis Carroll.

> *"T was stormy and the tall pines did quiver and tremble in the gale;*
> *all dark were the street and the weary villagers slept."*

Lewis Carroll clothed the grammatical skeleton with flesh in the form of nonsense-syllables in the first stanza of Jabberwockey:

> *"T was brillig, and the slithy toves*
> *Did gyre and gimble in the wabe;*
> *All mimsy were the borogoves*
> *And the mome raths outgrabe."*

When Alice heard this stanza, she said:

> *"Somehow....... it seems to fill my head with*
> *ideas - only I don't know exactly what they are!"*

Perhaps this prompted Hockett to observe that "the deletion of any one or two forms from the first portion (contentives) would leave the grammatical system of the language essentially unchanged; the deletion of even a single item of the second kind would have drastic consequences.".

Let us now see whether this observation of Hockett is applicable to Tamil. Deletion is one of the important foregrounding techniques practised by creative writers. As to what component of the language is to be deleted may differ from language to language according to its structural constraints. Likewise, within the same language this deletion may be constrained by the individual's option. Functor-deletion is a commonly found technique in the *Cankam* literature of Tamil, where we come across innumerable instances. Perhaps, the Dravidian structure provides enough scope for such a deletion. Deletion technique is followed either to meet the metric requirements or as an individual stylistic device of the poet concerned.

Let us consider the following two illustrations by the same poet:

(1) *pāṟai ñeṭuñcunai viḷaiṉṯa ṯēṟal* (Kapilar-Akananuru-2:4)
'honey grown (found) in the deep pond of the rock (hillock)'

(2) *ṯīmpaḻap palavin cuḷaiviḷai ṯēṟal* (Kapilar-Akananuru-182:3)
'honey grown (found) in the pulp of the sweet jack fruit'

In the first example, we find *viḷaiṉṯa ṯēṟal* wherein the relativizer is used along with the stem *viḷai*; but in the second example we find *viḷai ṯēṟal* wherein relativizer dropped. The reason is obvious; had it been *cuḷaiviḷaiṉṯa ṯēṟal* it would violate the *āciriyam* metre. Hence, the deletion of a grammatical functor.

In the following example, second case marker *ai* is deleted for the same reason.

ennīṯ ṯōṉē (Kapilar-Ainkurunuru-265:4) '(he) who left me'

The use of *ai* would have resulted in the form *ennainīṯṯōṉē*. This form would have clearly violated the *āciriyam* metre.

Sometimes, even when there is no metrical violation the poet prefers functor-deletion purely as a stylistic device.

Let us consider the following example:

ṯīṯalai māmai ṯēyap
pacalai pāyap pirivu ṯeyyō
(Kapilar-Ainkurunuru-231:3-4)

'Separation marked by the wearing-away of the
charming beauty and the change of complexion of the body'

In this example, the conjunctive marker *um* has been deleted even though its usage would not result in metric violation as under:

ṯīṯalai māmai ṯēyavum
pacalai pāyvum ....

The same poet uses the marker *-um* in a similar context, as found below:

ṉannuṯal pacappavum ṉaṟuṉtōḷ n̄ekiḻavum (Kapilar-Ainkurunuru-227:2)
'as the colour of the beautiful forehead changes and the fragrant shoulder becomes weak ....'

An exhaustive stylistic analysis of Tamil literary works of various periods demonstrate that it is the grammatical functors which are very frequently deleted without distorting the intended meaning.

The news headlines in the Tamil dailies also support this view. Let us consider the following examples:

rājīv gāṉḏi kolai	*vājpāy eccarikkai*
Rajiv Gandhi murder	Vajpayee warning
'Rajiv Gandhi murdered'	'Vajpayee warns'

In these examples, the Tamil phrases do not use any functor. Yet, there is no distortion of meaning.

Defective speech of some mentally retarded Tamil children also provides similar examples (Suganthi Fenn, 2000).

Let us consider the following:

kōyi vāṅki	*kōyilil vāṅkinēn.*	'(I) bought in the temple'

In this example, the locative case marker *-il* is deleted.

kampu vacci	*kampu vaccirukkān*	'(he) has the stick'

In this example, tense marker and the person-number suffix are found dropped.

The following sentence was observed in the speech of a child with stammering:

"eṅka periyappā ciṯṯappā cēṯṯu pōnōm
eṅka periyappāvum ciṯṯappāvum cērṉṯu ponāṅka"

"Our older and younger uncles went together"

In this example, the conjunctive marker *-um* is found dropped. Of course, the speech of such children is not always consistent. Though generalization is not possible, there is a prominent tendency to drop the functors.

All these illustrations cited so far, support the view that dropping functors in Tamil do not result in drastic consequences as observed by Hockett for English language.

It is believed that the first language to be retrieved by the bilingual aphasic patients is that language which was acquired by them first during their lifetime. On the same line, it may be assumed that it is the earliest system of the language which is well retained by the defective-speech children. Their speech reflects only that earlier stage which perhaps does not include the later developments of the language such as functors. For example the present gender distinction in Dravidian languages as different from the earlier system of masculine vs. non-masculine genders, two-way tense system of past vs. non-past developing into a three way system, the development of eight-way case system, various grammatical functors etc., represent the developments at a later stage. Perhaps it is this later stage which is not commonly found in a defective speech and in the poetic language as a result of deletion technique. News headlines and the so-called telegraphic language also support this view.

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THE THEORIES OF TELUGU GRAMMAR

B. Purushottam, 1/8 Demi, pp. 410, Rs. 500/- (US$ 50/-)

This is a monograph of immense use to students of Dravidian linguistics in general and Telugu language in particular. The author has surveyed various theories of grammar from the early times to the present day. The work is a comprehensive account of the grammar of ancient and modern Telugu. This book has a subject index which may be of help to the student as a ready reckoner. Neatly printed and beautifully bound, the volume will be a priced possession to lovers of grammar and linguistics.

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PHONETIC AND PHONOLOGICAL PROBLEMS OF LEARNING TELUGU AS IDENTIFIED BY BILINGUAL LEXICOGRAPHERS

A. USHA DEVI
P.S. Telugu University, Hyderabad

All normal children across the world learn the language of the environment where they are born and brought up. However, as children grow into adolescents and adults they generally seem to complain how difficult it is to learn another language. Inspite of that, human beings invariably 'learn' more than one language in some way or the other, for several different reasons. This is one of the most important reasons for equating applied linguistics broadly with language teaching for many years.

Needless to repeat that Telugu is a Dravidian language. However a lot of vocabulary has entered into Telugu linguistic realm before hundreds of years ago, and occupied an irrevocable place. Even ancient scholars both poets and grammarians were aware of it, which is evident from their distinction between *deesya* and *tatsama* words.

When a learner begins to learn Telugu, he immediately runs into the trouble to know the exact number of alphabets in Telugu. There is no consensus on this even among modern scholars. While conventional alphabet contains the 'primary' letters, all of them have almost equal number of 'secondary' features, and a learner has to learn both of them completely in order to read and write in Telugu.

Chinnaya Suri, in his *Bālavyākaraṇa*, states that there are thirty six letters for Telugu, while there are forty for Prakrit and fifty for Sanskrit. One wonders why Suri begins with Sanskrit alphabet for Telugu grammar. But it is only the beginning of knowing the learning problems of Telugu.

This was well exemplified by the non-native, western scholars, who came to India as administrators and therefore had to learn Telugu for all practical administrative purposes. In doing so, most of them ultimately ended up as better scholars (than may be administrators), who compiled dictionaries (bilingual) and also wrote Telugu grammars. Their prefaces and introductions written for dictionaries and the first chapters of grammars are all devoted for the description and explanation of Telugu sounds, spelling and every problem related to Telugu phonology. It is interesting and amazing to know how meticulously they have explored Telugu phonetics and phonology years before scientific study of language analysis began in Europe and America.

For the purpose of analyzing the 'learning problems' as identified by the western scholars, three dictionaries and two grammars were consulted. The details are as follows:

a. *Dictionaries*

1. Telugu-English Dictionary, C.P. Brown, 1852
2. A Vocabulary of Gentoo and English, W. Brown, 1818 (Telugu-English nighaṇṭuwu)
3. Galletti's Telugu Dictionary, Galleti A. de Cadillac, 1935

b. *Grammars*

1. A Grammar of the Telugu language, C.P. Brown, 1856
2. A Grammar of the Teloogoo language, A.D. Campbell, 1851 (Commonly termed as Gentoo)

These works were, according to their own statements, written either to assist themselves or to help others who had to learn Telugu for administrative purposes. All these books thoroughly discuss the phonetic and phonological problems of learning Telugu in their own methods. However, they share a great amount of similarities though they all differ in their organizations and presentations.

The paper discusses the views expressed by the above-mentioned scholars in the following order: 1) Telugu alphabets, 2) Consonants: Pronunciation and Spelling, 3) Vowels: Pronunciation and Spelling, and 4) Phonological processes involved in identifying the similarities and differences in the above works undertaken for the study.

I. Telugu Alphabet

Unlike English, where anybody can identify the alphabet having twenty six letters, the number of letters in the Telugu alphabet are difficult to be stated uniformly. The standard Telugu grammar written in 1857 by Chinnaya Suri, *Bālavyākaraṇamu*, states three different systems of alphabet for Telugu: 1. Having fifty letters (because of Sanskrit vocabulary), 2. Having forty letters (because of Prakrit vocabulary), and 3. Having thirty six letters (having native vocabulary only). The letters also have secondary symbols which are to be learnt by a learner. Now let us consider the descriptions and observations of the non-native scholars individually regarding the vowels and consonants of the Telugu alphabet.

(a) C.P.Brown: C.P.Brown in his grammar of Telugu mentioned the alphabet as it was mentioned in traditional grammars. According to him there are 15 Vowels, 35 Consonants. Of them 10 are aspirates and five are nasals. He made the following observations:

1) That native tutors waste a lot of time in teaching certain combinations of letters which never occur; such as *lkha, sba, vjha, yra, khpa* and said that it was a 'fruitless trouble'.
2) Many letters have two forms: primary and secondary
3) Ten consonants never use *talacattu*, that is the secondary mark for short a [a].
4) A circle (called sunna) *o* is used for nasals.
5) The letters of the alphabet appear very numerous.
6) Though the spelling is easy, difficulty arises from the liberty of spelling; that is, the same word is used in various ways. The rules of spelling are 'tediously minute'.)
7) Instead of initial *i, ii, yi, yii* are used and for *u* and *uu, vu, vuu* are used (generally).

(b) William Brown: William Brown selected only 30 letters from the alphabet and omitted the rest of the alphabet. According to him there are only two vowels a, aa, and the rest are consonants. They are *k, kh, g, gh, c, j, jh, t, th, d, t, d, dh, n, p, ph, b, bh, m, y, r, l, v, s, ṣ, s, h, ksh*. One can easily identify that he has discarded the following: *n, ch, n, dh, ṇ, th* and according to him they never occur word initially and hence not included in the dictionary making. However, he seemed to have mentioned them in his grammar, which is not available these days. He was unhappy to note that some letters require *attachment or detachment* of the symbolic vowel (secondary mark) .... are miserably imperfect (i.e., *na, vs. sa, pa, vs. va, sha, vs. ha*). However, he failed to recognize the role of the vowels in Sandhi.

(c) Galletti: As stated by Galletti himself in his dictionary, "there is no other Telugu dictionary in the least like it. I have for one thing used Roman alphabet ....". According to him, the learner has to cope with an 'unmanageable' alphabet. Therefore he chose to arrange them in Roman script, and the alphabet system, thus formed is: *a, aa, b, bh, c* (for *k* velar), *ch* (for *c* palatal), *d* (for *d* dental and *D* retroflex), *dh, e, ee* (long *e*), *f* (borrowed from Urdu and English), *g* (velar voiced), *gh, h, i, ii, j, jh, kh, l, m, n, o, p, ph,* *r, s, S, t, u, v, y, z*. The observations made by Galletti for the Telugu language in general have a great influence on later linguists, and his illustrations have social, historical and linguistic relevance to study them from different perspectives.

d) A.D.Campbell: Campbell in his grammar gives a thorough description of each and every aspect of the alphabets of Telugu. Therefore, according to him a learner has to first and foremost learn 81 letters in all in order to learn Telugu. He also noted aspiration and initial y and v before vowels as well as the variations between *c: ts* and *j: dz* as others. His description is meticulous and observations are very serious regarding the history of the language and people as well.

II. Consonants: Pronunciation and Spelling

Now let us take the consonants first and see the observations of the above scholars one by one.

a) *C.P.Brown*: C.P.Brown observes that though the spelling of Telugu words is easy, the difficulty arises from the liberty of spelling by the common people. The important problem he faced while learning Telugu was the initial softening of hard consonants, and he was not happy with his tutors' explanations. He stated that words beginning with *p, t, T, e* and *k* also have variants of *b, d, D, j* and *g*.

Examples:

toova ~ doova	'way'
tuvaLincu ~ duvaLincu ~ dhuvaLincu	
kooru ~ gooru	'wish or want'
celangu ~ jelangu	'be or flourish'
paDuta ~ baDuta	'fall'
kaluguta ~ galuguta	'to have'

Though he correctly identified that the hard consonant undergoes softening, and a soft never changes to a hard one, his confusion about the variation made him to compile the monumental Telugu-English bilingual dictionary taking the *varga* (i.e., all the sounds pronounced in a particular place, for example, bilabials *p, ph, b, bh*) as a unit. In fact as he recognized correctly, it is a softening rule in the language and poets used it extensively. That is why the grammarians grouped them under two technical terms as *paruSās* (*p, t, T, c, k*) and *saraLās* (*b, d, D, j, g*) and this rule applied in the context of a nasal (overt or covert) in the *pūrva pada* (first form). In poetic language among the *b, d, D, j, g b* may also vary with *v*; *j* with *s*; thus having a '*g, s, D, d, v*' group of changes. However Brown failed on it particularly in his dictionary making.

All nasals are replaced by a circle (*o*) 'sunna' neutrilizing them in writing though they are pronounced distinctly.

Aspiration is peculiar to Sanskrit borrowing only.

The hard *d* (retroflex) is often pronounced nearly like *R* (flap,) in some cases as e.g. *bezawāRa/bezawāDa*.

(b) *William Brown*: He has rejected three nasals (other than bilabial [*m*] and dental [*n*]), and three aspirated sounds [*ch*] is rejected while [*jh*] is retained, [*Th*] is used while [*Dh*] is dropped. Similarly [*dh*] is retained and [*th*] is left out. According to him, no words begin with these sounds.

He noticed and recorded that the same letter [*c*] has two different pronunciations *ch* as in *chakram* and *ts* as in *tsannu*. Similarly, [*j*] also has two variants, *dj* as in *djavvādi* and *za* as in *zabba*. The distinction is in the place of articulation differing due to the presence of the following vowels. He recognised two different pronunciations for the same spelling of [*v*] in *vayasu*, as opposed to *watti*. Here the distinction is due to lip rounding, which is non-significant.

c) *Galletti*: Galletti compiled his dictionary, as stated already above, in Roman alphabetic order, for he was interested in learning the spoken form rather than the written. However he keenly observed the speech and made good observations on the pronunciation. The following are a few examples.

The Sanskrit aspirates lose their aspiration. The distinction between *s*, *ṣ* and *sh* i.e. dental , retroflex and palatal is neglected. The sounds *ts*, *ch*, *dz* and *j* are confounded and one letter each does duty for both sets and the same sound *ts* is sometimes written as one letter and sometimes as two. (The observation is right, however one is a single sound while the other is a cluster of *t* and *s*, in Sanskrit (tatsama) words. A single letter for both aspirate ph and f. The *ph* is found in Sanskrit words whereas *f* is found in Urdu and English words.) Hard *d* becomes very like *r* eg. *āDutāru* ~ *ārtāru* (Intervocalic fricativisation).

The first 25 consonants are divided into *vargas* and the voiceless unaspirated series are *paruSas* (hard) and voiced unaspirated series are *saraLas* (soft). Campbell shows the consonants by separating the secondary symbol, which, in fact is inseparable part of the syllabic character of Teloogo and he explains the reasons for his separation. Like C.P. Brown, he too distinguishes 10 consonants having no symbol of *talacattu* (√) while the rest of them having it inseparably. He takes the classification of consonants by Telugu grammarians into 3 - *paruSas*, *saraLas* and *sthiras*.

Common observations found in all scholars

1. The aspirates are of Sanskrit borrowing and lose other aspiration in speech; though one has to learn to write them correctly.
2. The distinction between *s, ṣ* and *sh* is neglected in pronunciation.
3. There are two sound variants [*c*] and [*ts*], and [*j*] and [*dz*] which are conditioned by the following vowels.
4. The nasals are neutralized in the spelling where all the nasals are replaced by *anusvāra* i.e. *sunna*.
5. The vowels other than [*a*] and [*ā*] have an initial glide coarticulation in speaking (pronunciation) *y* before *i, ī, e, ē* and *v* before *u, ū, o, ō*. Conversely, the same becomes true in the spellings of poetic dialect of Telugu.
6. There are two pronunciations (allophonic) [*v*] and [*w*] for a single spelling.
7. The *paruSa* consonants change to *saraLas*.
8. A single pronunciation has two different spellings.
9. The orthographic distinction of *r* shown by writers is lost in pronunciation and later in writing too.
10. The retroflex voice stop has a 'flap' pronunciation in the intervocalic position though in writing the same letter is used.

III. Vowels: Pronunciation and spelling

Telugu vowels are more complex to learn to pronounce and to spell because the variations are unpredictable due to linguistic, regional and soical reasons. All the scholars, however have noticed them correctly.

Many Telugu words use the vowel a and u in the second syllable at pleasure. And numerous Telugu words, chiefly which have three short syllables admit two modes of spelling.

a ~ u *PanDaga ~ panDuga, aNakuva ~ aNukuva*
a ~ i *dongalincu ~ dongilincu, nemali ~ nemili*
i ~ u *piccika ~ piccuka, adigoo ~ adugoo*

Sometimes, *a, i, e, u* are all used.

e.g. *yelaka ~ yelika ~ yeluka ~ yelike* 'rat'
daggara ~ daggira ~ daggera ~ deggera 'near'

Instead of the vowel *r*, consonant *r* is used. But this is wrong. *krshna* is vulgarly written as *krushna*.

ē is pronounced as *ya*

eg.	*lē ka* ~ *lyāka*	'without'
	lē ta ~ *lyāta*	'tender'
	vē La ~ *vyāLa*	'time'
	pē ta ~ *pyāTa*	'town'

[illegible]
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b) *William Brown*: William Brown has used Telugu alphabetical order for his dictionary. However, he has used only two vowels *a* and *ā* the rest of the vowels are shifted to the place of glides, *y* and *v*. Accordingly, one has to look for [*illu*] under [*yillu*] and [uuru] under [*vūru*], as the words beginning with *i, ī, e, ē* are pronounced with initial glide [y] and *u, ū* and *o, ō* with initial glide [*v*] (Usha Devi, 1996).

Short *a* is as often not indefinite, approximating sometimes to *e* rather than to *a*. Long *a* varies with its place in the word and the stress upon it: *vastāra* ~ *vastarā*. Short *u* varies according to sounds preceding and following. It sometimes approximates to *o*, sometimes to *a*. Final short *u* is hardly ever pronounced at all so that though written Telugu is full of *u*, spoken Telugu is dominated by *i* or *a*. Other final vowels are either elated or quietly dropped whenever possible. When the last vowel of a word is elided, that word undeservedly gets saddled with the first vowel of the next, which equally undeservedly loses its head. The vowel symbols (6 long, 6 short and 2 diphthongs) by no means exhaust the range of vowel sounds used in speaking. For example: ordinary *ā* or *ē* is used for the vowel pronunciation in l *ka, plic ru* (*pilcharu* for Galletti), and for *m ta*, it is *mēta*.

d) *A.D. Campbell*: The duration of the sound of the vowels is divided into short (hrasva), long (*dīrgha*) and continuous (*pluta*), and the vowels *a, i, o, ([u]), rō, e, o* have each three measures of sound. The short and long (*or*) are represented by distinct letters, but the continuous measure of sounds have no separate characters. The lone [*ē*] is pronounced as [*ya*], e.g., *nēla* ~ *nyāla, mēka* ~ *myāka*. The consonant *y* is improperly used with initial *i, ī, e, ē* and the consonant *u* is incorrectly used with initial *u, ū, o, ō*. The diphthongs *ai* and *au* are also written as *ayi* and *avu* respectively. *krshna* is erroneously written as *krushna* or vice-versa.

IV. Phonological processes (as identified by all the scholars)

Apart from the above discussed problems, Western scholars also identified certain important and common phonological processes of Telugu. Using the modern phonological rules, their observations are summerised below.

1. *Vowel elision or Deletion*: The last vowel of a word is elided and saddled with the first vowel of the next word.

e.g. *mēka + undi --- mēkundi* ‘a goat is there’
mēku + undi --- mēkundi ‘a nail is there’
kāki + undi --- kākundi ‘a crow is there’

Vowel deletion also occurs word medially in tri-syllable and more combinations.

e.g. *ciluka - cilka*, ‘parrot’ *aDagaka - aDakka* ‘not asking’

2. *Vowel Harmony*

i -u / -u
kāki + lu - kākulu ‘crows’
katti + lu -kattulu ‘knives’
u -i / -i
puli + ku -puliki ‘to the tiger’
gadi + ku -gadiki ‘to the room’

3. *Assimilation*

Hard consonants change to respective soft consonants. i.e. *paruṣas* to *saraḷas*.

anna + tammulu annadammulu ‘brothers’
dēvatala + kolici dēvatala(n)golici ‘having worshipped the Gods’

Regressive Assimilation

ceruku + gaDa ceruggaDa ‘sugarcane stick’
munaga + kāDa munakkāDa ‘a drum stick’

4. *Glide insertion*

y before *i, ī, e, ē*
both wordinitially and in sandhi
v before *u, ū, o, ō*

V. Observations and Conclusions

Though all the scholars differ in the methods and organisations of their dictionaries and grammars on Telugu language, they all without fail shared common views regarding the sounds, spellings and orthographic representations of Telugu language. A careful and thorough examination of all these bring out the problems of learning Telugu phonetics and phonology. And they are found to be equally valid even in the present day for the learners of Telugu. Both L_1 and L_2 learners also face problems only in the areas of pronunciations and spellings of vowels and consonants as identified above. The teacher and learner of Telugu are, hence, to be cautioned about them and need to be given special training for learning the standard variety.

It is amazingly interesting to notice that all the Western scholars considered in this paper could correctly identify the phonetic and phonological problems involved in learning the Telugu language and they were successful in convincing the learner to pay special attention to them. Of all the scholars, Galletti was very influential on modern phonologists of Telugu; particularly, Gerald Kelly and later C. Ramarao got inspiration from his observations on phonological processes. They all correctly recognized the pronunciation and spelling problems related to speech, while at the same time agreeing that standard Telugu is in general "phonetic." Modern Studies, even though not exhaustive, on L_1 and L_2 acquisition and learning also find more or less the same problems in learning vowels and consonants of Telugu phonology and hence it is important to note that all these works are very valid even in modern times, even after hundreds of years.

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DRAVIDIAN ENCYCLOPAEDIA Vol. III

Ed. V.I. Subramoniam, HB, Demy 1/4, pp. 924, Rs. 1340/- (US$ 200/-)

A compact compilation, this volume as a reference work covers all aspects of Dravidian languages. The tribal languages of the Dravidian family are described with their grammatical features. The five major languages - Tamil, Telugu, Kannada, Malayalam and Tulu - too have their descriptive grammars. Articles on literature are elaborate. Short pen pictures of important authors and their contributions are also available. A comprehensive index of 47 pages provides easy access to information.

ENCYCLOPAEDIA OF DRAVIDIAN TRIBES Vol. III

Ed. T. Madhava Menon, HB, Demy 1/4, pp. 360, Rs. 870/- (US$ 100/-)

This volume contains articles on Dravidian tribes living in the cis-Vindhyan area and north of it. The major tribes described are the Brahuis, Gonds (various sub-tribes), Abuj Maria, Bison Horn Maria, Muria, Maria, Kondh, Oraon etc. The chief editor, in his introduction, has expressed anguish at the plight of some of the tribes, like the Yenadi, Bison Horn Maria, Koya and others who have become the "victims of development". A consolidated index covering all the three volumes has been incorporated.

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Notes & Discussions

THE WORD FOR 'FIRE' IN ORIYA

PANCHANAN MOHANTY
University of Hyderabad

1. Introduction

In his discussion on the strained relationship between modern linguistics and etymology, Malkiel (1983:497) has raised the following questions: "How could such almost violent separation of two erstwhile close allies have occurred at all? How could the split have materialized in such a distressingly short period of time? What is etymology bereft of linguistics likely to become? In what direction is linguistics deprived of its etymological roots most likely to stray? Can etymology be at all expected to acquire a much-needed touch of modernity? And, above all, are there any prospects of eventual reconciliation between the two disciplines now so visibly at loggerheads?" Before delving into the answers of all these questions, he has tried to determine the causes that led etymology to such a catastrophe. According to him, the following are the five main causes (Malkiel 1983:499):

(a) The general demand for constant innovation - the recoil from the *déjà vu* - tends to discredit any emphasis that enjoyed heightened prestige as late as half a century ago; in other words, the former strength of etymology is in itself a heavy liability.

(b) The passionate, not to say occasionally morbid, interest in theory places any intellectual pursuit that hinges on chance discoveries, flashes of imagination, and irremediably lacunary records in a vulnerable position.

(c) The diligent amassing of data that some early-twentieth-century etymologists practiced, as if to compensate for the element of arbitrariness or caprice at the moment of decision-making, has grated on the nerves of those younger linguists who have been spoiled or, if you prefer, immunized, as regards any excessive commitment to data-gathering, by structuralism and related movements.

(d) Etymology is unavoidably, incurably historical and explicative, not descriptive, this circumstance, which in other cultures or at other junctures might have been a major asset, has turned out to be a liability in our Age of Cross-Disciplinary Militant Ahistoricism.

(e) The style in which etymological discoveries are ideally announced caters to the experts or laymen's leisurely reading habits. Where reading as the principal vehicle of intellectual experience is itself in full retreat, the sub-disciplines geared to its vigorous growth are apt to be weakened.

The above remarks of Malkiel (1983) are very crucial in the context of the present paper in which I want to highlight two points. First, it is absolutely necessary to possess a sound knowledge of phonology and morphology in order to decipher the etymological history of a word. Second, the Oriya word for fire */niā:/* has a Dravidian source and it is indicative of the importance of Dravidian substratum in the Oriya language and culture.

2. Words for Fire in NIA and Oriya /niā:/

Among all the words for 'fire' in Old Indo-Aryan (henceforth OIA), */agni/* is the most commonly used one and most of the Neo Indo-Aryan (henceforth NIA) languages use words derived from it. Let us take the following examples from Turner (1966:3): Sindhi */a:g, a:gi, a:go/*, Punjabi */agg, a:g/*, Nepali */a:go/*, Bengali */a:g. (MSB. a:gun)/*, Maithili */a:gi/*, Bhojpuri */a:gi/*, Awadhi */a:gi/*, Hindi */a:g, a:gi/*, Marathi and Konkani */a:g/*. It is quite interesting that Oriya uses altogether an unrelated and different word */niā:/* for 'fire'. Let us first discuss the views of Oriya scholars about it.

Scholars hold divergent views regarding the biography of this word. These views can broadly be categorized into two groups. The first one is that its source is in Sanskrit and most scholars favour it. The second one is that it is derived from a native source, i.e. its source is not determined. So let us consider the first view in detail.

There are also differences of opinion among those who believe that */niā:/* has been derived from a Sanskritic source. According to Praharaj (1934:4261), its etymological history is as follows:

agni → gnia → niã → niā

Needless to say that this derivation is a concocted one, because metathesis of */agni/* to */gnia/* and elision of */g/* are highly unmotivated and unnatural. In metathesis, normally two phonemes replace each other, e.g. */æks/* for */æsk/* 'ask' in English or */buD/* for */Dub-/* 'to sink' in Oriya. Then dropping of */g/* from */gn/* is unacceptable as it is stronger than */n/*. As per the rule, it is the weaker phoneme that gets dropped, not the stronger one. Consider the following examples:

Source Word	**Oriya Word**	**Gloss**
smasa:na (Skt.)	*masa:Ni*	'cremation ground'
sthira (Skt.)	*thira*	'still'
station (Eng.)	*Tesan*	'station'
driver (Eng.)	*Da:ibhar*	'driver'

Notice that in the first three source words, sibilants */š, s/* are weaker than */m, th, T/* and that is why they are dropped in Oriya, but in the fourth source word */r/* being weaker than */D/* gets elided. Again, nasalization of the final vowel also does not conform to the genius of the Oriya language. We will not dwell upon it because it will be taken up later.

Realising the awkwardness in Praharaj's (1934) derivation, Mohapatra (1976: 105) has derived it from */agnika:/* in the following way:

agnika: (Skt.) → *annia:* (Pkt.) → *niã:* (Or.)

It should be noted here that */*annia*/ is not attested in Prakrit. As */g/* is stronger than */n/*, */gn/*, in fact, has become */gg/* in the assimilation process, not */*nn*/. Nasalization of the final */a:/* is also extremely doubtful.

Though Turner (1966) identified Skt. */nida:gha/* as the source of Oriya */niã:/*, no Oriya scholar has taken note of it with the lone exception of Dash (1982:411), who fully supports this view. In fact, Turner (1966:411) has given the following derivational history for this Oriya word:

Skt. */nida:gha/* → Pali */nida:gha/* → Pkt. */Nida:ha, Nia:ha/* → Oriya */niã:/*

While endorsing Turner's (1966) view, Dash (1982:170) has stated the details regarding the change of Pkt. */nia:ha/* to */niã/* in Oriya. His argument is that there are two steps involved in it, i.e., drop of the final */ha/* and then nasalization of */a:/*. Though the first one is possible in Oriya, the second one is not. His statement "If there is a nasal consonant in a word, then there is not dearth of examples in which the word final vowel gets nasalized." must not hold for a word derived from Skt. */nida:gha/*. In order to make the point clear, let us discuss the Oriya nasalization rule.

Unlike some other NIA languages like Hindi and Bengali, vowels do not get nasalized in the environment of a nasal in Oriya. For example, in contrast with */mã:/* 'mother' in Hindi and Bengali, Oriya has */ma:/* from Skt. */ma:ta:/*. Notice that when the former two languages show nasalization on */a:/*, there is no nasalization on Oriya. Oriya follows a rule very consistently that can be formulated like the following:

If the source word has a non-nasal consonant in a syllable and it is deleted in the derived word in Oriya, the remaining vowel need not be nasalized even though the preceding syllable contains a nasal.

The following examples will drive home the point:

Skt	**Oriya**	**Gloss**
nagara	*naara*	'town'
nava	*naa*	'nine'
nadi:	*nai*	'river'
na:va	*naa*	'boat'
matr	*ma:i*	'female'
matula	*mauLa:*	'maternal uncle'

Or the other hand, when a nasal in the source word is deleted in the derivational process, the Oriya word shows nasalization. For example:

Skt.	**Oriya**	**Gloss**
na:ma	*nā*	'name'
grama	*gā:*	'village'
vama	*bā:*	'left'
dhu:ma	*dhuā:*	'smoke'
bhumi	*bhui*	'earth'
a:miSa	*ā:isa*	'non-vegetarian food'
bhramara	*bhāāra*	'a big black bee'

Therefore, after the elision of */d/* in the second syllable of Skt. */nida:gha/*, the vowel */a:/* cannot be nasalized even though */ni/* precedes it.

Not only this, there is also another reason which creates difficulty in accepting Skt. */nida:gha/* as the source of Oriya */niā:/*. It is interesting to note that Oriya seems quite sensitive to the morpheme boundaries. This can be illustrated by taking the example of sonorization of */D, Dh/* in this language. While rejecting the earlier view of Oriya scholars regarding the Oriya phonological rule that *D* → *R/V-V* and *Dh* → *Rh/V-V*, I have shown that this rule does not work if */D, Dh/* are preceded by a morpheme boundary (Mohanty, 2000). The following examples are illustrative:

ni + Dara	→ *niDara/*niRara*	'fearless'
be + Dhanga	→ *beDhanga/*beRhanga*	'lack of manners'
su + DhaLa	→ *suDhaLa/*suRhaLa*	'beautifully proportioned'

It is clear from these examples that this boundary blocks sonorization of */D, Dh/*. In other words, this boundary blocks the process of weakening of */D, Dh/* in Oriya.

The word */nida:gha/* is derived by adding the prefix */ni-/* to the stem */da:gha/ (<dah-)* (Monier-Williams 1976:548). If we extend the argument that the above said boundary does not allow weakening of the initial consonant of the stem, then */d/* of */da:gha/* cannot elide. So it has to remain as */nida:gha/* in Oriya. In fact, the extant Oriya literature testifies it. This word has been used by various poets and writers of this language.

The other point to be mentioned here is that *Carya:gi:ti*, which contains the earliest specimen of Oriya and was written between 9th and 12th centuries, has */a:gi/*, not */niã/*.

Da:hai Dombi:ghare la:geli a:gi
sasahara lai sincatu pa:Ni (Poem 47)

"The Dombi burns - fire has been applied to the house. Taking the Moon, I sprinkle water." (Kaverne 1986:255). Not only that, the first major Oriya poet Sa:raLa: Da:sa's *Sa:raLa: maha:bharata* (15th century) attests different words for fire like */agni/*, */anaLa/*, */jui/*, */bahni/*, but never */niã/*. Another 15th century prose-writer Na:ra:yaNa Da:sa has used */agni/* and */anaLa/* in *Rudrasudha:nidhi*, but */niã/* is not there. If we accept Turner's (1966) and Dash's (1982) contention that Prakrit */nia:ha/* (*/Nia:ha/*) has become */niã:/* in Oriya, then it should have found a place in *Carya:gi:ti*, as well as in the earliest Oriya compositions like *Sa:raLa maha:bharata* and *Rudrasudha:nidhi*. Most probably, the first occurrence of this word is found in the narration of *GauDia: Gobindadeba's* reign in *Ma:daLa:pa:nji*, a text that was written towards the end of the 16th century or in early 17th century. GauDia: Gobindadeba ascended the throne of Orissa after the death of king Mukundadeba of Chalukya dynasty in 1568, but it has not been supported by the historians of Orissa . However, it is interesting to note that after just one sentence of the one that contains */niã:/*, we find the use of */agni/*. It clearly indicates a transition between */agni/* and */niã:/*.

3. The Source of Oriya /niã:/

Now the question is where does */niã:/* come from and why did it replace other existing words for fire, to be specific */agni/*.Let us discuss the second part of the question first as it has caused the introduction of */niã:/*.

Besides */niã:/*, there are two other Oriya words, i.e., */agi/* (<Skt. */agni/*) and */jui/* (Skt. */jyoti/*) which refer to 'fire' But both of these are used predominantly in the context of funeral pyre. After the cremation of a dead body is over, when people go to extinguish the pyre,it is called */agi sitaLa:iba/* 'cooling of fire'. Even in the *MusaLiparba* of *Sa:raLa: maha:bha:rata, /agni/* has been used in the description of cremating Lord Krishna's dead body. */jui/* refers to either funeral pyre or the pit on which cremation takes place. It can be argued here that because of this reason

/agi/ and */jui/* became taboos in Oriya and therefore, a new word was required to replace them. In Mohanty (1998), I have shown that the non-human plural marker */-guRa:/* has been introduced in Oriya only after *Sa:raLa: maha:bha:rata* was written because it occurs twice in just one couplet, which I consider to be a later interpolation by a scribe. Likewise, */niã:/* has most probably been taken from the Dravidian source though Dash (1982:170) has categorically rejected such a possibility by stating that "Words like */nerippu/* (Tamil), */nerippu/* (Malayalam), */nippu/* (Telugu), */niyur/* (Kurux), etc. are found to be used for fire in Dravidian languages. But it cannot be decided from these that Oriya */nÃã:/* has been derived from them." (tr. by PM). But it is worth mentioning here that the South Central, Central and North Dravidian languages, which are spoken mainly in Orissa, West Bengal, and Bihar, use many words that are very close to */niã:/* in both meaning and form.

For example, Malto uses */niru/* 'sunshine, heat' (DEDR 2910, Burrow & Emeneau 1984: 252), Parji */nir-/* 'to blaze', Kurux */niyu:r/* 'embers, live coals, wood glowing with fire', Malto */nare/* 'flame' (DEDR 2929, ibid: 255). What is significant is that all these words are listed under the palatal nasal */ñ/* which is referred to as */niã/* in Oriya. There is also another source which is the word for ashes in these languages, e.g. Parji */ni:d/*, Gadaba */ni:r/*, Gondi */ni:r/*, Konda */ni:ru/*, Pengo */ni:z, ni:s/*. But the most crucial evidence comes from Manda which has */ni:y-darambu/* (DEDR 3693, ibid: 329). It is a compound and */darambu/* refers to 'ashes' in the South Central Dravidian languages like Pengo, Manda and Kuwi. (DEDR 3092, ibid: 268-269).

It is, therefore obvious that */ni:y-darambu/* cannot mean 'ashes-ashes'. Since */darambu/* refers to ashes in Manda, */ni:y/* has to have some other referent and the most probable option is 'fire'. The evidence in support of this claim comes from the fact that such doublets are very common in Oriya (along with other Eastern NIA languages) and we find a blend of Dravidian and non-Dravidian words in some of them, e.g. */luga: paTa:/* 'clothes', */kaNTa:jhaTa:/* 'dried weeds', */ghara ba:Ri/* 'house and the space behind', */ka:ntha ba:Ra/* 'wall and fence'. In these examples, */paTa:/* and */jhaTa:/* are related to Tamil */paTTai/*, Telugu */paTTa/* (DEDR 3876, Burrow & Emeneau 1984: 346); Tamil */ceTi/*, Telugu */ceTTU/* (DEDR 1941, ibid: 176), Tamil */vari/*, Kannada */bari/*, (DEDR 4112, ibid: 365) and Parji */pari/*, Konda */paru/* (DEDR 4030, ibid: 359); Tamil */varai/*, Kannada */bara/*, Telugu */varaju/* (DEDR 5261, ibid: 475), respectively. Likewise, */niã:pã:usa/* 'fire and ash' is also a doublet that is used quite frequently in Oriya. So, my contention is that Oriya */niã: pã:usa/* is a reflection of Manda */ni:y-darambu/*, and Oriya */nÃã:/* has come from Dravidian and is related to Manda */ni:y/*.

4. Conclusion

To sum up, this paper shows that many scholars have determined wrong sources for the Oriya word */niã:/* because they have not fully understood certain phonological and morphological rules of the Oriya language. Thus, it is evident that sound grammatical knowledge is required for etymological studies. Then, it has been argued that the source of Oriya */niã:/* is not in Indo-Aryan as some scholars have claimed, but in Dravidian. It gives a clear indication regarding the presence of a very strong Dravidian substratum in the Oriya language and culture.

[**Colophon**: Thanks to my friend and colleague, Dr. G. Uma Maheshwara Rao, for clarifying certain points while writing this paper.]

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NANDINAGARI SCRIPT
P. Visalakshy

This elegantly-produced book of 281 pages has a systematic tracing of all Devanagari and Nandinagari letters with which Sanskrit manuscripts were written in some parts of South India. Priced modestly at Rs. 850/- and bound very well, it will be a worthy addition to any library, personnel or institution.

Notes & Discussions

INDI-AWE: A TRIBAL DRAVIDIAN LANGUAGE

B. Ramakrishna Reddy
P.S. Telugu University, Hyderabad

1. Geolinguistic setting and discovery

1.1. The Kondh tribe inhabits the Southern Orissa districts of Kondhmals, Kalahandi, Koraput, Rayagada, Navarangapur and Gamjam; Vizianagaram and Visakhapatnam districts of Andhra Pradesh.

1.2. One tribe- five different languages: Kui, Kuvi, Pengo, Manda and Indi-Awe. Indi-Awe spoken by a section of the Kondh Parjas inhabiting the highlands of Thumal Rampur (Kalahandi) and Kasipur (Rayagada). Their place of residence is inaccessible and one has to trek through the highlands and forests to find the villages. The number of speakers is estimated to be around 5,000.

1.3. The ethnonymy is intriguing in that *indi* is an interrogative, third person, neuter, singular which means 'what or which one'. *a:we* is the non-past neuter, singular, third person, negative form of the predicative-copulative verb 'be' which means 'not, not to be, no' etc. In the absence of other distinguishing peculiar cultural traits with their fellow-tribes, the subtle linguistic expressions are used for separate indentity (by the speakers) of different languages, such as

Kuvi	*a:?e*
Pengo	*awut*
Manda	*a:wu*

1.4. Indi-Awe was identified as a separate speech by the present author in 1979 during his linguistic fieldwork on Manda. Various tests like mutual intelligibility, speakers declaration, opinion of other neighbouring tribes etc. confirm Indi-Awe as an independent speech, not a dialect.

2. Historical background

Indi-Awe, a member of South-Central Dravidian sub-group - shares many lexical and grammatical traits with Kuvi, Pengo, Manda, Konda, Kui, Gondi and Telugu. Structurally it is closer to Manda and Kuvi, sharing both innovations and retentions with these two sister languages.

3. Socio-linguistic set-up

3.1. Indi-Awe speakers - bilinguals with proficiency in mother tongue and the local dialect of Oriya. Lexical borrowing from Oriya is predominant especially in the domains of abstract notions, outside world, modern knowledge, technological implements, business etc. Consequently the impact of Oriya on lexical as well as grammatical systems is noticeable, thus leading to socially motivated language change in certain spheres.

3.2. In the central Indian linguistic stratification the attitudes of tribes towards major languages is one of acceptability, learning and adapting as LWC. The dominant groups denounce even the existence of tribal languages, ridiculing them when used in public places. Being minor group the tribes take it on their stride.

3.3. Literacy among the tribes - very low ranging from 3% to 10%. Problems of medium of instruction and alien content in the school curriculum.

4. Sound system

4.1 Phonemic inventory

4.1.1 Consonants

	Labial	**Dental**	**Retroflex**	**Palatal**	**Velar**	**Glottal**
Plosive	*p b*	*t d*	*ṭ ḍ*	*c j*	*k g*	
Affricate						
Nasal	*m*	*n*	*ṇ*		*ň*	
Fricative		*s*				*h*
Trill/Flap		*r*	*ṛ*			
Lateral		*l*				
Semi-Consonant	*v*			*y*		

4.1.2 Vowels

	Front	**Back**
High	*i ī*	*u ū*
Mid	*e ē*	*o ō*
Low		*a ā*

4.2 Salient Phonological features

(a) Contrasts for phonemes and their distribution are stated elsewhere.

(b) Unlike major Dravidian, initial clusters are quite common in Indi-Awe as they are triggered by metathesis.
E.g. krī 'to play', *kṛāg* 'to buy', *kṇunj* 'tender, small, young', *grek* 'to wabble', *gṛā̃y* 'to laugh', *prey* 'to sell', *pṛēn* 'bone', *mṇiň* 'waist', *mrehku* 'moustache'

(c) The phonological processes of cluster reduction in Sandhi, voice assimilation, palatalization, permutation and coalescence are quite common in the language.

(d) The voicing contrast is employed for the production of transitive verbs from the intransitive base,

Intransitive		**Transitive**	
jūng	'to assemble'	*jūk*	'to make to assemble'
ṭrung	'to be shaken, to swing'	*ṭruk*	'to shake, to swing'
munj	'to be immersed'	*muc*	'to immerse'
paḍ	'to be broken'	*paṭ*	'to break'

(e) Syllable based plural formative suffix: monosyllable roots take *-ke/-ku* and non-monosyllabic nouns take *-n/-in*.

Gloss	**Singular**	**Plural**
'ant'	*tār*	*tārke*
'house'	*il*	*ilke*
'feather'	*tūku*	*tūkun*
'sambar'	*māňgeh*	*māňgeheň*
'stream'	*varkūṇ*	*varkūṇiň*

5. Word Structure

The parts of speech - Noun, verb, adjective and adverb can be set up for Indi-Awe. The roots have the canonical form of (C) V, (C)VCV or (C)VCCV.

5.1. Nouns are inflected for number and case. The two-way number system - singular is unmarked whereas plural is marked on the noun. The plural marking is sensitive to syllable structure as indicated above. Besides the human masculine and feminine nouns have further nuances of plural formation.

Human masculine

Gloss	**Singular**	**Plural**
‘a labour (man)’	*kāynēň*	*kāynāň*
‘man’	*aṇḍrēň*	*aṇḍrāň*

Human feminine

Gloss	**Singular**	**Plural**
‘sister-in-law’	*kuṛiyagāṛ*	*kuṛiyagāske*
‘potter woman’	*kumrāṛ*	*kumrāske*
‘fisher woman’	*kāvtāṛ*	*kāvtāske*
‘woman’	*ājgāṛ*	*aske*

5.2. The case system - Nominative is unmarked - Accusative and dative syncretism, oblique form used as genitive, locative, instrumental/ablative are marked by case suffixes. There are many postpositions pertaining especially to spatial relations and physical dimensions.

5.3. The pronouns in Indi-Awe can broadly be studied under the following- personal, demonstrative and interrogative. With reference to deixis the distinction between participant and non-participant pronouns is highly salient, as the former set is marked in the verb inflection of the language. In other words, the semantico-pragmatic notion of participant is manifested through verbal deixis.

5.3.1. The personal pronouns

	Singular	**Plural**
I.P.	*ān (e)*	*ām (e)*
II.P.	*īn (e)*	*īm (e)*

5.3.2 Demonstrative - Based on the spatial deictics - three-way distinction - proximate *(ī)*, distal visible *(ū)*, and distal non-visible *(ē)*. On this locative distinctions, the semantic features of gender (masc, fem and neuter) and number (sing - pl) are added. Thus, the encapsulated demonstratives in the language are:

grammar space	**proximate**	**distal-visible**	**distal-non-visible**
Masc sing	*īvaň*	*ūvaň*	*ēvaň*
pl	*īvar*	*ūvar*	*ēvar*
Fem sing	*īdel*	*ūdel*	*ēdel*
pl	*īvahiň*	*ūvahiň*	*ēvahiň*
Neut sing	*īdi*	*ūdi*	*ēdi*
pl	*īva*	*ūva*	*ēva*

5.3.3 Interrogative - the base is *in*

	Singular	**Plural**
Masc.	*inaň*	*inar*
Fem	*indel*	*inahiň*
Neut	*indi*	*ina*
II P.	*inati*	*inater*
I P.	*inata*	*inatuň*

5.4 Verb morphology

The structure of a finite verb will have the elements in the following order:

Verb root + (Derivative) + Tense + Pronominal endings.

5.4.1 Tense has a two-way distinction of past and non-past with all the verbs, whereas the existential 'be' and its negative indicates a three-way distinction of past, present and future.

5.4.2 The pronominal endings

	Singular	**Plural**
I P.	*- e*	*- uň*
I P.	*- i*	*- er*
III P Hu Masc.	*- en*	*-er*
Hu fem & neut.	*- et/-e*	*- iň*

5.4.3 Reference to speech act participant in verbal inflection. The verbal deixis of Indi-Awe indicates a specification of first/second person whenever (the participant pronouns) occur in dative-experiencer, patient, benefactive, locative or goal positions. In syntactic terms the grammatical relations of DO, IO and other oblique objects are specified in the verb.

edel evanka ār-t-et 'she called him'
she him call past she

edel nanka ār-ta-t-et 'she called me'
me call SAP past she

The *-ta-* has several allomorphs which are phonologically conditioned.

5.4.4 The verb also indicates the movement of something or an action taking place away from the vicinity of speaker - hearer.

evar edelka ṭrak-ka-t-er ‘They beat her there’
They her beat there past they

The distal action is marked whereas the proximate action is not marked.

5.4.5 The verb also indicates the frequentative - intentive and repetetive action as part of its morphology by the addition of *-pa-/-ba-* to the base

edel evarka ār-ba-t-et ‘She called them (repeatedly)’

5.4.6 Indi-Awe exhibits the characteristics of polysynthetic personal verbs, i.e. the tendency to move from analysis to synthesis.

6. Lexical and grammatical diffusion

Indi-Awe is replete with lexical borrowings from Oriya. It has also the impact of Munda languages in its grammatical structure, e.g. (i) the use of vigesimal system for the formation of higher numerals in place of decimals, (ii) echo-formation with change in all vowels instead of the Dravidian type of syllable-change, (iii) morphologizing object reference by incorporating it in the verb root.

7. Language or dialect

The controversy of language versus dialect is a common problem among the tribal languages of central India. Indi-Awe has several distinct linguistic traits,though it shares certain lexical items as well as grammatical patterns with neighbouring Kuvi and Manda. Mutual intelligibility is in the form of a cline - comprehendible in certain spheres, but not throughout. The speakers express that their language is quite different from the other two languages.

8. Convergence and language retention

8.1. Contact induced linguistic convergence in multilingual context. India presents an example of language retention with incorporation of features from contact situation. Indi-Awe, though spoken by a small group of 5,000 people is a close-knit community retaining ethnic commonness with other tribal groups like the Manda and Kuvi speakers. The danger to these languages is imminent from the major provincial languages like Oriya or Telugu. No doubt the major languages are intruding into several domains of tribal life.

8.2. Language use: The use of Indi-Awe is confined to everyday interaction in family and for intragroup communication. As a home language it is serving the purpose of ethnic identity, and the sub-group recognition among the Porja (tribal) groups. In the rituals and intratribal ceremonies, it is replaced by Kuvi which has a numerical majority and wider geographical spread in the region. In group activities like farming, fishing, hunting etc. .... again the interacting language depends on the composition of the group. The hierarchy is Oriya → Kuvi → Indi-Awe. In interactive duals like singing between groups of young men versus young women, e.g. the Kuvi and Indi-Awe group, each group will use its own language, with least attention to intelligibility.

9. Need for Fieldwork and Linguistic Survey

The lesser known tribal and minor languages like Indi-Awe are threatened to extinct by the onslaught of major state languages in several domains. A time may come when competent speakers might not be available as is the case with younger generation of parengi - Gorum speakers. There is an urgent need to record the entire tribal and minor languages while the reliable speakers are still available. The following points may be considered in this context:

9.1. Linguists, especially the younger generation, should attach priority to field-work on endangered languages.

9.2. Training in transcription, phonetics, language analysis and field methods should be arranged by competent universities and institutions.

9.3. The UGC and HRDC (through CIIL) should take up a fresh linguistic survey of India with focus on tribal and minor languages. The linguists may emulate the "People of India" project implemented by the Anthropological Survey of India.

9.4. The reliable data has to be analyzed and published in the form of grammars, dictionaries, texts and discourse materials. A computer-aided language archive should be created to preserve these languages for scholarly knowledge and for posterity.

9.5. The native speakers deserve encouragement to retain their language for identity. Bilingual schooling, recognition to small languages, allowing equal partnership in multilingual contexts are some of the intensives to retain this great Indian heritage which will help to rewrite the people-oriented cultural history of India.

BĀLAVYĀKARAṆAMU OF PARAVASTU CINNAYA SŪRI

P.S. Subrahmanyam (Translation), 2002, pp. 43 + 381, Rs. 1200/- (US$ 120/-)

This magnificently-produced volume in 10 chapters with 3 appendices opens our eyes to Telugu grammatical tradition. Though Panini is mentioned, the Katantra pattern which is also the pattern of Tolkappiyam, is followed. For describing the grammatical tradition of Telugu, this work is indispensable. The English translation is pleasing and precise.

THE INTERNAL CONDITIONING OF PHONOLOGICAL SYSTEMS

André Martinet, Demy 1/8, pp. 214, Rs. 290/- (US$ 30/-)

A collection of rare articles of Martinet, this book contains his papers on linguistic economy. Probably the only functional linguist, he has clearly stated the linguistic changes within the structuralist framework. His work will surely attract linguists interested in phonology and linguistic change.

International Journal of Dravidian Linguistics

Notes & Discussions

ON THE REFLEXES OF PROTO-DRAVIDIAN *c-

B. GOPINATHAN NAIR
ISDL

Prior to and after Emeneau's (1988) comprehensive delineation of the distribution as well as reconstruction of the phonetic and phonemic nature of PDr. **c*- and its development, several scholars have examined the manifestations of this sound in various Dravidian languages and dialects and expressed certain independent observations, several of which are complementary and some contradictory. For instance, see L.V.R. (1947), Krishnamurti (1961, 1994, 2001, 2002) Subrahmanyam (1983, 2003), Andronov (1970, 1999, 2001) Zvelebil (1970), G.U. Rao (1982) and others.

According to Emeneau, PDr.**c*- is phonetically a palatal affricate [*tš*] by comparative evidence of its reflexes in different languages. Initial **c* is most unstable and subject to simplification leading to (i) the elision of the stop component resulting in a sibilant [*s*] in several languages and [*ś*] in some Tamil dialects. (ii) the loss of the fricative component resulting in *t*- or *k*- (iii) the progressive development of *s*- > *h*- > Ø in certain CDr. languages and (iv) the complete loss.

Proto-Dravidian initial **c*- has undergone different types of sound changes from the state of retention in several languages and dialects to de-affrication and plosivization i.e. dentalization and velarization besides sibilant formation, fricativization and loss in one or the other languages and dialects, the consolidated changes of which can be formulated as follows:

A. Retention

**c-: c-* (Ta.Ma.Ir.Kas.Ko,Kod.Ka.Tu.Kor.Te.Par.Gad.Kur.Malt.Br.)

B. Change

1. De-affrication and plosivization

(i) Dentalization **c-* > *t-* (dental vl.stop) (To.) regularly
(Ko.Ḳod.Ka.Te.Gon.Kui.)sporadically
(Tu.) dialectally, only in Brahmin speech.

(ii) Velarization *c- > *k*- (velar vl.stop) (Kur.Malt.Br.) incomplete and partial. (Kol.Nk. Parji.) sporadically.

(iii) Sonorization *c- > *j*- (palatal vd. stop) (Ka.Tu.Te.)

2. Sibilant formation

*c- >*s*- (dental vl. sibilant) (Ta.Ir.Kas.Yer.Ko.To.Ka.Kod.Tu.Kor.Bell. Te.Gondi (West, North), Konda.Kui.Kuvi.Kol.Nk.Gad.)

*c- >*ś*- (palatal vl.sibilant) (Ta.Yer.Tu.)

3. Fricativization *c- > *h*- (Velar vl.fricative) (Tu.Gond, (East & South) Pen. Man.Kui.Kuvi)

4. Loss

(i)*c-> Ø (SDr.Te.Koya dialect of Gondi)

(ii) *s*- > *h*- (Gon.Kui.Kuvi.Pen.Man. dialects)

(iii) *h*-> Ø (Hill Maria Gondi and Koya dialect of Gondi)

E.g.

1. Ta.Ma. *curuḷ*, Ko. *curṇ-*, To. *tu:ḷ*, Ka. *suruṭu*, Kod. *turiḍ-*, Tu. *turṭu*, Te. *doralu*, Par. *cirḍ-*, Gon. *suruṇḍ-*, Pen. *hūṛ-*, Kui. *trong-*, Kur. *kūr-*, Malt. *kuṛg-*, Br. *kūr-*, 'to roll up' < PDr.*cur-uḷ-*

2. Ta.Ma. *cuma*, Ko. *tamṭ*, Ka. *sivuḍu*, Tu. *tumbuni*, Te. *cumma*, Gad. (Oll.) *kumt-*, Kur. *kumnā*, Malt. *kume*, Br. *kubēn* 'to carry a burden' < PDr.*cuma-*

3. Ta.Ma. *cā*, To. *soy*, Ka. *sāy*, Te. *cāvu*, Par. *cay*, Ga. *say*, *cay*, Gon. *sā-*, *hā-*, Kon. *sā-*, Pen.Man. *hā-*, Kui. *sā-*, Kuvi. *hā-*, Kur. *Khē?e-*, Malt. *key*, *Br. ka?-* 'to die' < PDr.*cā-*

4. Ta. *cēr*, Ma. *cēruka*, Ko. *cēr-*, To. *sȫr-*, Ka.Kod. *sēr*, Tu. *sēruni*, Te. *cēru*, Kol. Nk. *ser-*, Gon. *serāna*, Kui. *serna*, Kuwi. *hērinai*, Kur. *ker-*, Br. *kēb*. 'to join' < PDr.*cēr-*

5. Ta.Ma. *cikku*, Kod. *cikk-*, Te. *cikku*, To. *tik-*, Tu. *sikkï/tikkï*, Par. *ciṙng-* ,Gon. *jirk-*, *hilk-*, Kuwi. *sikku*, *cikku* 'to be entangled' < PDr.*cikk-*

6. Ta.Ma.Ka.Te. *āru*, Ko. *ār*, To. *ōr*, Tu. *āji*, Kol. *ār*, Gon. *sārung*, *harung*, Kui. *sāja* 'six' < PDr.* *cār-*

7. Ta.Ma.Ka.Tu.Te. *uppu*, Ko.To. *up*, Kod. *uppï*, Kol. *sup*, Nk. *supp*, Par. *cup*, Gad. (Oll.) *sup*, (S) *cuppu* 'salt' < PDr.*cupp-*

s > *h* > Ø (Gondi dialects) c.f. Krishnamurti (2001:361-65)

8. *sūr/sur, hūr/hur,ūr/ur* < Proto-Gondi. **sūr* 'to see'
9. *son-, san-, hon-, han-, an-* < Proto-Gondi. **son-* 'to go'
10. *sowar/sowor, sawor, howar/howor, hawar, owar/owor* < Proto-Gondi. **sowar* 'salt'
11. *sā, hā* < Proto-Gondi. **sā-* 'to die'
12. *sī/siy-, hī-/hiy-, ī-/iy-* Proto-Gondi. **sī/*siy-* 'to give'

De-affrication and plosivization

The sporadic development of *c-* > *t-*, or *k-* or *Ø-* in some etymological groups have been discussed in detail by Emeneau (1988:358-69).

Emeneau (1953) demonstrated the change of *c-* > *t* in To. which is a regular feature. In Tu., it is a dialectal feature occurring only in the Brahmin speech.

Though *c-* > *k-/ē̌, ū̌* (in Kur. Malt. Br.) has been stated as regular by Emeneau (1961), later he had modified it as sporadic and incomplete (1988). The *k-/c-* alternation occurs before any vowel in PDr. according to Peiffer. e.g. **kā/*cā* 'to go'.

c- > *k-* occurs not only in NDr. Group but also in Kol. Parji, Gadaba of CDr. sporadically.

Sibilant formation, fricativization and Loss

The inconsistency of the occurrence of word initial *c-* forms in certain languages and *s-* forms in others with regard to cognates in one and the same etymological group as well as the fluctuation between *c-/s-* forms and the presence of doublets in some languages viz. Ma.Ka.Tu.Te.Ko., which can be attributed to sociolinguistic, regional or chronologically earlier vs. later changes etc., do not permit the reconstruction of both **c-* and *s-* at PDr. stage. Ko. shows an unconditional *c-/s-* alternation.

In Ka., *s-* is more prevalent compared to *c-* and in certain forms, doublets occur. E.g. *cāru/sāru* 'juice'.

c-/s- forms occur dialectally in Te., the former in Brahmin dialect and the latter in substandard dialect. E.g. *cūḍu/sūḍu* 'see' (c.f. Subrahmanyam 1983:317).

While noting the sporadic change *c-/s-* > *t-* in Malayalam, Subramoniam (2002) says that it may be an early Dravidian feature preserved in the Tamilized text of *Rāmacaritam* and those of other dialects of Malayalam contrary to the earlier notion that it was a feature of the lower caste dialects since this change is also noticed in the scribal writings of erstwhile southern

Travancore largely in Indo-Aryan loan-words and the scribes belonged to the higher caste groups. Bloch had noted the occurrence of the palatal affricates *tš/dž* before front vowels and alveolar *ts/dz* before back vowels in Marathi, Oriya of Indo-Aryan, Kuruku of Munda and also in Telugu and northern Kannada. Since it is largely a Telugu dialect feature Indo-Aryan and Munda might have borrowed it from Telugu.

The dropping of PDr. initial **c*- was noted by Meile (1943); Burrow (1947, 1968) discussed this problem in great detail. This change occurs in several etymological groups in SDr. and Te. and also in the Koya dialect of *Goṇḍi*. However, **c*- is maintained in a large number of items in SDr., in the Koya and Maria dialects of *Goṇḍi* and in a few instances forms with doublets *c-/s-* also occur. *c-* > *Ø-* is a regular change in the Koya dialect of *Goṇḍi*. It is also a frequent feature in the PaRaya Dialect of Malayalam spoken in Northern Kerala (Gopinathan, 1974).

Krishnamurti's (1969) proposal to reconstruct two PDr. **c*- where $*c_{1-}$ > *Ø* and $*c_{2-}$ > *c-/s-* for explaining this irregular loss and alternation in several etymological groups is also not wholly convincing with reference to such examples as in Ta. *camai-/amai-* 'to make', Ka. *cappaṭe/appaṭe* 'flatness' etc. (c.f. Andronov, 1999:57).

Loss of **c*-, **ś*, **s* of IA borrowals in SDr. has been noted by Burrow.

E.g. Ta.Ma.Ka.Kod.Tu. *ēṇi* Ko. *ēṇi* To. *ēṇy* < Skt *śrēṇi* 'ladder'
Ta. *ūci* Ma. *sūci, tūśi*, PaRaya *dial. ūci* . < Skt. *sūci* 'needle'

According to Subrahmanyam (1971), loss of **c*- is a SDr. isogloss whereas for Krishnamurti (1998) **c*- > *s*- > **h*- > *Ø* is a shared rule in both SDr. and SCDr. However, both of them agree that in dropping of **c*- Te. goes with SDr. which is due to areal convergence. As the dropping of **c*- occurs only in a small segment of the lexicon and it manifests differently in several items in SDr. and Te. area, Emeneau (1988) felt the inadequacy of the neogrammarian method for a satisfactory explanation of all such instances.

Burrow and Bhattacharya (1960:77) had already noted the diagnostic feature that separate the Gondi dialects to two main divisions viz. northern and western where it is preserved with a few exceptions whereas to the south and east in the Hill Maria dialect of Koya this h- has been completely elided.

Emeneau (1988:355) has further stated that the dropping of**c*- in SDr. and Te., however may exhibit some parallelism to that in the *Goṇḍi* dialects where loss of initial **c*- is the regular development, there is no confirmatory evidence that the southern loss went through the stages seen in *Goṇḍi* as **c*- > *s*- > *h*- > *Ø* especially as evidenced by Ma.Kod.Ka.Te.

where the elision took place while **c-* was still an affricate in pronunciation thereby emphasizing the loss as a single-step process irrespective of what is seen in *Gonḍi*. Subrahmanyam (1983, 2003) also concurs with this view and reiterates that there is no need to posit an intermediary stage **h-*.

Krishnamurti (2001:20) on the contrary, after a thorough scrutiny of the *Gonḍi* dialect materials from Grierson (1906), Burrow and Bhattacharya (1960), Burrow and Emeneau (1961), Uma Maheswar Rao (1982) and Beine (1994) avers that *s- > h- > Ø-* is a complete regular sound change in certain regional dialects of *Gonḍi* that can be depicted by a two-step process viz. *s- > h* in the west, north and north-west and *h- > Ø-* in the south and south-east which occur through lexical diffusion is an on-going change, both phonetically and lexically gradual. This incidentally supports Wang's (1969) characterization of both phonetic and lexical gradualness as one aspect of the mechanism of lexical diffusion.

According to Krishnamurti (2001:357), Telugu shared with SDr. a prehistoric change of PDr. **c- > Ø-* but the intermediary stage of **h-* was not attested as the change was arrested midway after covering a few lexical items and the pre-historic change of SDr. and what occurs in Kui.Kuvi.Pengo.Manda of SCDr, which shares the innovation *s- > h-* in different degrees but not *h- > Ø-* are one and the same. Besides **c- > s-* in certain lexical items in SDr. is a sociolinguistically conditioned change which cannot be retrieved and *s- > h-* was an allophonic or sub-phonemic change and hence not attested and finally elided which is represented as **c- > s- > *h- > Ø-*, an important PSDr. isogloss that distinguishes SDr. and SCDr. He has demonstrated with the Gondi dialect materials that the two-way sound change is a conclusive case of lexical diffusion leading to regular sound change and that the neogrammarian vs. lexical diffusionist models are not conflicting but complementary mechanisms though more studies of this kind are needed to confirm this Labovian working hypothesis. It should be noted that not only the change *s- > h-* but *c- > s-* as well as *c-/s-* alternation is also sub-phonemic as sibilants and fricatives were non-phonemic at PDr. and PSDr. stages and the attribution of allophonic status to the former alone and consequent non-attestation and elision of **h-* was not wholly convincing except buttressing the positation of an intermediary stage. Despite the phonetic plausibility and theoretical feasibility of such a change, Emeneau's assertion of the change as a single process step and the lack of any valid evidence that the southern loss spread through the Gondi dialects still sustained until Krishnamurthi (2002) made a deft observation that prehistoric borrowing from one language into another within the same family or across families, under favourable circumstances, provides missing links in phonological and morphological change and illustrated it with examples of loan words from Sanskrit and Middle Indic which attest the **h* stage. For instance, see just two examples furnished by him. The PDr. root **cīnt-/*

cīntt-* 'date palm' has cognates in all the sub branches. Ta.Ma.*īntu*, Ma. *ītta* (<īntt-*), Tu. *īndi*, SCDr. Te. *īndu*, Go. *sīndi*, *hīndi*, *īndi*, Konda. *sīntel*, Kui, *sīta*, Kuvi, *sindi*, Pe. *hīndi*, CDr. Par. *cīnd*, NDr. Kur. *kī̃da* (PDr. *cī*- >*kī*- in NDr.)

Though **c*- >Ø in SDr. and no intermediary stage of **s*- > *h*- is seen as such, presumably the former might have occurred through the latter which is upheld on the strength of the preservation of *h*- in any Dravidian loan word in neighbouring languages within or across language family - here in Sanskrit where it is from an older **s*- and not from *s*- > *h*- found as an on-going change in several CDr. languages which is relatively of recent origin.

c.f. Sanskrit. *hīntāla*, a Dravidian borrowal, a combination of <**hīnt*- <**sīntt*- and *tāla*- also a loan word from PDr. **tāl̲* '*a* palm'.

Another illustration is the interpretation of the old Tamil formative -*ā* as developed from the contraction of an earlier -*ah* < *- as, thus indirectly attesting an intermediary stage *s* /*h* in non-initial position supported by Sanskrit borrowings where the occurrence of -*cV*/ -*sV* is noticed in SDr., Brahui and -*ha* in Sanskrit. E.g., PDr. **kaṭ-aca* 'male of cattle', SDr. Ta. *kaṭ-ā*, kaṭ--āy, Ma. *kaṭ--ā*, Ma. *kaṭ--acci,* Tu. *gaḍ-asu*, Ka. *kaḍ-asu*, SCDr: Gon. *kāṛ-ā*, Kon. *grālu*, Kui. *grāḍu*, NDr; Kur. *kāṛ-ā*, Br. *xarās* 'bull' c.f. Skt. *kaṭāha* 'young female buffalo'. He has thus reinforced his earlier view and expounded that the change *s* > *h* >Ø in SDr. had diffused into Gondi dialects in SCDr. from Telugu which is still an on-going change in SCDr. Relying on this testimony Emeneau himself has accepted this sound change **c* > *s* > *h*- >Ø shared by both SDr. and SCDr. as averred by Krishnamurti. A long vexing problem has got a good solution. Comparative and internal reconstructions alone will not always provide the missing links in phonological and morphological changes as rightly discerned by Krishnamurti, which necessitates a broad sophisticated way of looking at the manifestations of sound changes.

Chronologically, **c*- > Ø- is dated by Burrow at about third century B.C. on the basis of the equation of the name of the Tamil king *Atiyamān* with *Satyaputo* found in an Asokan inscription. According to Subrahmanyam (1983) and Emeneau (1988), if this equation is correct the loss of **c*- had not yet begun at the time of Asoka. Andronov (1999:67) on the other hand says that loss of **c*- cannot be considered as a common isogloss of SDr. and Telugu as Telugu and Tamil-Malayalam separated much earlier than third century B.C. However, this change might have started at PSDr. stage itself as it occurs in a wider area of SDr.

To sum up:

1. PDr. initial palatal **c*- shows various reflexes in individual languages viz. *c, t, k, j, s, ś, h,* Ø representing regular as well as sporadic changes.

2. Phonetically, *PDr* *c- might have been a palatal voiceless affricate as illustrated by Emeneau by observing its overall manifestations in various Dravidian languages and dialects though there exists difference of opinion on theoretical grounds regarding the validity of phonetic reconstruction of certain PDr. Phonemes. (c.f. Krishnamurti in *Introduction to Emeneau's Dravidic Studies*, 1994).

3. Phonemically, PDr. **c*- is considered as a voiceless stop as the reconstruction of sibilants, fricatives and affricates at PDr. stage is unwarranted because the occurrence of sibilants and fricatives in the spoken dialects of Ta.Ma.Ka.Te. and in one or the other modern Dravidian languages and dialects where it shows phonemic contrasts with **c*- as well as the sonorization *c*- > *j*/*z* in Ka.Tu.Te. are attributed to secondary development and borrowing as these reflexes occur either inconsistently or with doublets in one or the other etymological groups.

4. The change of PDr. initial **c*- leading to de-affrication and sibilant reduction is a wholly unconditional sound change which in Neogrammarian terms is a partial incomplete change as truly stated by Burrow and in lexical diffussionist's sense, an on-going change i.e. a change in progress as averred by Emeneau, supported by Subrahmanyam and further well exemplified by Krishnamurti.

5. Krishnamurthi's positation of an intermediary stage **h* and restoration of the missing link in the sound change **c* > *s* > **h* > Ø is warranted by historical insight and the illustrations drawn to demonstrate it viz. prior to the elision of PDr. **c* it went through an intermediary stage *s* > **h* as attested by such forms occurring in part of the borrowed vocabulary of Skt. and Middle Indic which is a noteworthy insight for reconstruction especially in tracing out prehistoric stages in the absence of such expected forms in one or the other language(s)/subgroup(s) of the Dravidian family.

6. The theoretical issues that have surfaced though tackled to some extent by Emeneau and Krishnamurti, still entail a thorough contemplation viz. (i) on the dependability of phonetic reconstruction of certain PDr. Phonemes, (ii) whether the Neogrammarian doctrine of cent percent regularity and exceptionlessness can comply with all instances of PDr. reconstructions of sound changes leaving the extra linguistic factors as invariants? (iii) whether the lexical diffusionist's model or the transformationalist's pattern of rule change can adequately reconcile all seeming irregularities, exceptions or whatsoever of its kind in historical comparative reconstruction of sound changes?

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Review

BUDDHIST THEORY OF MEANING AND LITERARY ANALYSIS. Rajnish Kumar Mishra*. 1999. New Delhi: D.K. Print World (P) Ltd. Rs. 380/-.

Indian tradition has expressed enormous interest in the concept of language and its usage from the Vedic age and period succeeding it. Yaska's *Nirukta* and *Pāṇini's Aṣṭādhyāyī* are a few available testimonies showing the interest and perseverance of ancient scholars in pursuing language studies with rigour and determined effort for maximal effect and proper understanding. With the formation of philosophical schools in India, there have been sustained endeavour and introspection regarding the nature, scope and behaviour of language which resulted in the thematization of various theories in keeping with their metaphysical speculations. In integrating language theories into Vedic exegesis and practices, *Mīmāṁsā* is a pioneering school and the later schools followed suit paving the way for the evolution of Indian hermeneutics. The philosophy of language as a discipline of study and research has attracted the attention of philosophers in the West from the mid-twentieth century which gained momentum in the advent of the school of analytical philosophy.

In recent years, K. K. Raja's *Indian Theories of Meaning* (1977) is a brilliant exposition of Indian ways of looking at language and its usage in grammar and philosophy. *The Philosophy of Word and Meaning* by Gaurinath Sastri (1959) explores the Indian philosophy of language in a *śāstric* way. B.K. Matilal's *Word and the World* (1990) deserves a special mention as it embodies a brief but critical analysis of language, reality and their interrelation. The present book *Buddhist Theory of Meaning and Literary Analysis* of Rajnish Kumar Mishra is an attempt in this direction designed to deal with the philosophy of language with more concentration on Buddhist traditions.

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* This review is written by Godavarísha Mishra which appeared in Journal of the Institute of Asian Studies, Vol. XVII, No I, September 1999.

Besides introduction, the book is divided into five chapters. The introduction gives a synoptic account about the objective of the book and the contribution it intends to make by relating the nuances of philosophy of language to linguistic and literary aspects which, according to the author, is hardly done in earlier attempts. Chapter One entitled "Philosophy of Language and Competing Indian Theories of Meaning" discusses the difference between linguistic philosophy and philosophy of language and shows how language has been the primary concern of Indian thinkers who have dealt with this ontologically and epistemologically. The author surveys the transition that took place in the works of *Bhaṭṭoji dīkṣita* and *Nāgeśa* to the philosophy of grammar following *Bhartṛhari*. The theories of meaning propounded by *Mīmaṁsā, Nyāya* and Jaina schools have been treated very briefly leading up to the Buddhist theory of meaning. Chapter Two deals with "Reality, Cognition and Expression in Buddhist Thought" which more or less is a short summary of the philosophical tenets of all the schools of Buddhism.

The third chapter entitled "Buddhist Theory of Meaning (*Apohavāda*)", gives a detailed analysis of the philosophy of language according to Buddhist dialecticians like *Diṅnāga, Śāntarakṣita, Dharmakīrti, Kamalaśīla, Ratnakīrti* and others. The author successfully presents objections raised by those who are opposed to Buddhist doctrine of *Apoha* like *Vācaspati Miśra, Kumārīla Bhaṭṭa, Bhāmaha, Uddyotakara* and others. The counter arguments put forth as answers to the objections raised have been explained with the caption "Exponent's view" and this no doubt is an admirable exercise carefully worked out by the author. That the concept of *Apoha* has parallels in non-Buddhist traditions has been amply exemplified with reference to *Vyāḍi*, one of the pre-*Pāṇinian* grammarians (p. 136) who upheld the view that it is the mutual exclusion of the word meaning that constitute the sentence meaning though as far as the word meaning is concerned, he advocated the view of the grammarian. Here, the author wrongly refers to Professor Kunjunni Raja who never views *Vyāḍi* as pre-*Pāṇinian*. (*Adyar Library Bulletin,* Vol. XVIII, pp. 185-187). The reference to structuralism of Saussure seizes the attention of any reader as the author reports that Saussure was a scholar in Sanskrit and was influenced by Buddhist theories of language to build up his theories of structuralism. This is indeed an interesting issue as to how there is affinity between Buddhist thinkers with Saussure and Derrida, but the synoptic analysis of this topic could not synthesize the author's claims into this chapter of his book perhaps because of the constraint of space.

The author takes up a famous poetry text, *Tintern Abbey*, of William Wordsworth in the fourth chapter, to find out the application of Buddhist model of language theorization in understanding the poem. The task of the author is indeed difficult in this chapter as he wants to analyze levels of meaning in *Tintern Abbey* with the parameters of meaning and language found in Buddhism. Usually, in Indian tradition, there are definite ways to deal with poetry, analyzing its contents by the norms stipulated in the texts of literary criticism, *kāvyaśāstras* authored by great critics like *Ānandavardhana, Daṇḍin, Bhāmaha* and others. Nowhere does one come across such an exercise as found in this book, even though as far as Indian literary critics are concerned their philosophical gleanings are reflected in their literary analysis. In spite of all the care that the author has taken to inject Buddhist theories of meanings into the literary analysis of the contents of *Tintern Abbey*, either for the better understanding or for a new-fashioned analysis, the outcome has not been very profound as intended. The conclusion summarizes the chapters and the author confesses the problem of constraints of time and space in the preparation of this book.

It is really a rewarding experience to go through this book which incorporates a lot of *śāstric* elements quoted from the original Sanskrit sources along with translations given by the author himself. Professor Kapil Kapoor deserves our special thanks for motivating his students to take up such topics and inculcating an interest in them to look at Indian *śāstric* tradition, which is never an easy job. In the introduction, Professor Kapoor has concisely noted down prospects and objectives of the *śāstra* group, which is very fitting for this work. His translation of *āstika* and *nāstika* as "theistic" and "non-theistic" is not precise. Usually, these two terms are used as orthodox and heterodox schools since there are schools like *Mīmāṁsā, Vaiśeṣika* and *Sāṁkhya* which are *āstika* schools but are not theistic. In a sense even Advaita is not strictly theistic as the God it accepts in associated with illusion. In that sense it is transtheistic. One may refer to *Pāṇinisūtra, astināstidiṣṭam matiḥ* (*Aṣṭādhyāyī*, 4.4.60) which does not specify the exact meaning accepted of the word *asti* and *nāsti* in the aphorism, whether it is authority of the Vedas, existence of God or the world hereafter.

The book has some mistakes in spelling and diacritical marks. The author Rajnish Kumar Mishra has indeed made his maiden attempt a great success and one who works with the Indian texts alone can realize the trouble one has to undertake in accomplishing such a *śāstric* task. As it is said *vidvāneva vijānāti vidvajjana pariśramam*. (A seeker after knowledge alone realizes the trouble that one has to take in obtaining the *śāstric* knowledge.) I recommend this book to the serious students of Indian philosophy, of language in general and Buddhist philosophy of language in particular and wish that many such works should come out in the years to come.

GODAVARISHA MISHRA

DRAVIDIAN ENCYCLOPAEDIA (Vol. 1)

V.I. Subramoniam (Ed.), Demy 1/4, pp. 728, Rs. 500/- (US$ 100/-)

The focus of this volume is on the political history of the States south of the Vindhyas. The prehistory, the findings in the excavation at Mohenjodaro and Harappa, etc., are completely covered. Every page brims with facts. Illustrative pictures and tables are part of this handsome volume.

The source material for history like Veda-s, Sangam literature, epigraphs, etc. have been fully discussed. The contributions to ayurveda, siddha and military sciences are covered with facts. The developments in chemistry, physics and mathematics have also been traced in this volume.

Well-produced, it is printed in offset and has attractive get-up comparable to the *Encyclopaedia Britannica*.

Review

CONVERSATIONAL KANNADA: A MICROWAVE APPROACH. U.P. Upadhyaya & N.D. Krishnamurthy. August, 2000. Bangalore: N.D.K. Institute of Languages. Rs. 300/- (with audio cassette), US$ 20/-, UK£ 16/-. pp. xv + 402.

The present work under review is the fifth reprint. The audio cassette is the only but useful new addition as an aid. The first edition (1972) has been already reviewed at least in *IJDL* (1975:4.1:175-80) by H.S. Ananthanarayana and earlier in the *Deccan Herald* (1973, July 1) by the present reviewer himself. The readers of *IJDL* are requested to go through them as they are sufficiently detailed. The present statements are made only as a complement to the earlier ones in the above reviews.

India is culturally and therefore also linguistically a polychromatic nation. Hence in spite of the linguistic reorganization of States, no State is mono-cultural and mono- lingual. Each State has its own Official Language which does not live apart from other languages which are used in un-official contexts and as languages of people or popular languages.

In Karnataka, about 40 million people have Kannada, the official language, as their home-tongue/mother-tongue. People learn Kannada as L_1 or L_2 depending upon their use of the language. Similarly, the people of neighbouring States require to learn Kannada as it is one of the four major Dravidian Languages having history from 3 c. of CE manifesting its rich heritage through verbal-art, performing arts and written literature. For building up national solidarity and inter-human living such a study is highly desirable. Lack of such human solidarity, through language and literature, results in emotional and factual fragmentation of Indian people as the recent gory incidents like demolitions of cultural symbols in Ayodhya and in other places as well as the pogrom in Gujarat and other areas shamefully but amply illustrate.

Learning other languages, along with one's mother-tongue, is no more a luxury in a multilingual nation or State. It is a culturo-politico-social necessity. Learning language other than one's mother-tongue, however, is not a child's play as it involves crossing cultural borders and stretching of one's linguistic boundaries. Any L_2 teaching needs pedagogical tools like scientifically designed textbooks and electronic aids, such as audio-visual cassettes, language-laboratory, etc.

The book under review is one of the best samples of teaching material in order to get into the spirit of the language. Surely it is second to none at least as Kannada is concerned. Prior to the present text, there have been earlier attempts, viz., William Bright *et al.* (1960), William McCormack *et al.* (1962, Mimeo), William Madtha (1970, Mimeo), U.P. Upadhyaya and M.N. Leelavathi. There are later productions too by K. Kushalappa Gowda, B.B. Rajapurohit, B. Mallikarjun *et al.*, etc.

Though the above teaching materials have their own significance, the present text is unique as it has employed the microwave approach designed by Earl W. Stevick and popularized by David J. Burns. In this technique, the teaching material begins with a conversation based on the adult learner's immediate/proximate context followed by its segmentation into the minimal grammatical units with relevant explanations for cultural events that occur there.

The microwave approach was successfully used in teaching languages as L_2 to the American Peace Corps volunteers. The authors of the present manual feel that the same method can be used *mutatis mutandis*, in our schools and colleges wherever a language needs to be taught as a second language. In this context, the present tome does serve as a useful handbook. It is needless to say that the managements and academicians should have a scientific bent of mind for introducing such an innovation as traditional minds find security in maintaining *status quo*. Hence, they usually resist any novelty or change *de jure* as well as *de facto*.

Though the focus of *Conversational Kannada* is the acquisition of conversational skill in the standard speech of the educated people of the southern part of Karnataka in its cultural *Sitz-im-Leben*, pattern practice, sound drills, grammatical notes, vocabulary and the section on Kannada graphemics are designed for the full development of all the language skills. The macro-text is divided into 5 micro-texts or units. Each of the units is subdivided into 10 cycles. Each cycle is constituted of Topical Focus, Grammatical Focus, Ritual, Interrogatives, Model Sentences, Conversation, Vocabulary, Teacher's Notes, Grammatical Notes and Supplements. At the end there are 4 appendices: (1) Content Analysis, (2) A Note on Kannada Phonetics, (3) A Note on Kannada Script and (4) Useful Vocabulary List. At the beginning, the system of transliteration employed in the book is indicated (pp.xi-xii). The preface introduces to the reader the pattern of the cycles besides some introductory information about Kannada as *la langue*.

Though the authors claim that the standard southern speech is used, we find certain mixtures of sub-standard and other regional forms which are ably pointed out by H.S. Ananthanarayana (1975:177-180). They are retained in this print too. No correction in this regard has come to my notice in my hurried reading. Printer's devil is here and there are present even in the Fifth Edition! Enumeration of the printing errors is tedious. The readers themselves can make a note of them.

The book in question, as a teaching material, is a useful tool, particularly in L_2 teaching. It could be beneficial in Postgraduate Diploma courses of teaching Kannada. The appendices are very useful in self-learning. As dialect boundaries are easily crossed over these days due to media and commutation, a mixture of dialects may not be a great problem in the present text. On the whole, the present book is still relevant and advantageous in teaching and learning Kannada as L_2, particularly in Postgraduate Diploma courses and Language Institutes, with the help of electronic and other teaching aids. Any other adult teaching programme also will find this book effective and handy.

Some of the salient features of *Conversational Kannada* are as follows: It gives proficiency on matters of day-to-day communication in Kannada. Pedagogically, it is a scientific and practical tool of teaching and learning Kannada as L_2. It is a book to the teachers as well as the taught as it is designed by authors who are linguists and experienced in teaching Kannada as L_2. Hence, the units there are structurally graded from simple to complex. Each lesson focuses on minimal grammatical structures and builds conversations on them. Thus, grammar is acquired hand in hand with speech in the native cultural context. Contrastive grammatical notes in English help to learn the specific markers of the language in question. The exercises provide help to the on-going practice of patterns and structures of Kannada.

In sum, the book is quite salutary and handy for teachers as well as learners of Kannada as second language. Hence, it has come out in the fifth edition now. The proof of the pudding is in the eating indeed. Lastly, the remarks made by Ananthanarayana (1975) especially in the pages 177 to 180 are to be considered at least in the future by the authors, and presently by the readers though obviously, *cum grano salis*.

WILLIAM MADTHA

ENCYCLOPAEDIA OF DRAVIDIAN TRIBES (Vol. 1)

T. Madhava Menon (Ed.), Demy 1/4, pp. 378, Rs. 950/- (US$ 100/-)

This volume is a thematic introduction arranged in a series of articles on physical anthropology, history, geography and environment, material culture (including economic activities), social organization, religion, life-cycle rituals, etc.

ENCYCLOPAEDIA OF DRAVIDIAN TRIBES (Vol. 2)

T. Madhava Menon (Ed.), Demy 1/4, pp. 404, Rs. 960/- (US$ 100/-)

This volume contains ethnographical reports on the communities of Kerala, Karnataka and Tamil Nadu, and some communities of Andhra Pradesh. Articles on the languages spoken by some of these communities have also been featured. The communities have been arranged in the alphabetical order of their ethnonyms transliterated into English.

Review

CONVERSATIONAL HINDI. N.D. Krishnamurthy. Bangalore: NDK Institute of Languages. Rs. 270/- (US$ 20/-).

The book under review is a compendium for learners of Hindi language through English medium. In modern context every language we employ in our day to day life has a definite and exclusive function. Hence, the subject *Language teaching* should be need based discipline and situation oriented.

India is a multilingual subcontinent with many well developed languages besides several dialects with regional variations. Though Hindi is accepted as a link language for communication purpose, its regional variations with structural diversities throw up a challenge to a Hindi language teacher in as much as devising the basic vocabulary and structural patterns required for a specific situation. Though there are many books in the market claiming "Hindi learning made easy" very few have been devised scientifically with result orientation in view.

Conversational Hindi: A Micro-Wave Approach authored by Sri. N.D. Krishnamurthy is the result and toil of a teacher, who has gained rich experience while engaged in teaching Indian languages to American Peace Corps. Volunteers who were expected to communicate with the local residents in their language. This group of volunteers were drawn from multi-nationals and spoke different European languages besides American English.

The book is divided into cycles. Each cycle is developed on topical focus, grammatical focus, rituals, interrogatives, model sentences, M phase, conversation, vocabulary besides teachers' notes, which provide guidance to teachers to use the material, purposefully. This also has included learners notes which contains proper instructions and gives cultural cues. The last two items of this content material is a sort of revision exercise where the learners observe functional grammatical points and follow up with further drills, based on the provided material. All this material is scientifically designed, productively selected, systematically and structurally presented in a graduated sequence. While the cycles 1 to 40 are designed on the basic vocabulary and spoken structures, cycles 41 to 50 provide lessons on *Review Conversation and Self-discovery Unit*. This enhances the utility value of the book, for this provides the learner an opportunity to put to test his acquisition.

A noteworthy feature of this book is its approach to the process of language teaching. This book teaches spoken Hindi through phonetic script. To meet the needs of Hindi sounds, a ‘sound chart’ is given using several linguistic symbols. The learner has to familiarize himself with this sound chart before he starts the learning process. Thus, whether one is a foreigner or a non-Hindi speaking Indian, if one is conversant with English alphabets, he can start with the first cycle in earnestness. The hardship of learning Devanagari script and its spelling process is totally avoided in the beginning. However, it is not altogether eliminated. After the learner is thorough with the spoken form of the language, he is introduced to the Devanagari script and its spelling process in Appendix III. A general classified glossary is added to the book wherein useful vocabulary is given under different sections.

The author Sri. N.D. Krishnamurthy is presently functioning as Director of NDK Institute of Languages and involved in research in the field of language teaching.

H.V. RAMACHANDRA RAO

LANGUAGE ACQUISITION: THEORY AND PRACTICE
V. Syamala, Demy 1/8, pp. , Rs. 350/- (US$ 60/-)

An excellent exposition of language acquisition relevant to teaching and learning of the English language, the study contributes to research in psycholinguistics, with the comparison of findings with first-language-acquisition studies as well as other second-language-acquisition studies of English, and identifying universals in the processes of L_1 and L_2 acquisition.

Review

KERALA'S DEVELOPMENT EXPERIENCE (2 vols.). Oommen, M.A. (Ed.). 1999. Institute of Social Sciences. New Delhi: Concept Publishing Company. Rs. 900/- (2 vols.). pp. 521 + xxxiii.

The term, 'Kerala Model', came to be applied to the peculiar experience of Kerala in Economic Development, especially from 1970. It was characterized by low Regional Income, but very high indices on Physical Quality of Life, based on low birth and death rates, low Infant Mortality Rates, high literacy, empowerment of women, access to Public Health and Educational facilities, adequate drinking water, and an efficient Public Distribution System for supply of essential articles at controlled prices. The papers presented in the two volumes under review had been selected from over 150 presented at an International Conference on Kerala's Development Experience, at Delhi, in 1996. The Editor, Dr. M.A. Oommen, an Economist of International repute, had been a post-doctoral scholar of the Rockefeller Foundation, and a Visiting Fellow at the Yale University. His "Introduction" to these volumes is a masterly summary of the various contributions of the other authors, and includes, "without indulging in polemics, a few general comments ..." (p xxiii). This work was undertaken at a critical period, when the historical conditions that led to the "Kerala Model" was on the threshold of becoming non-viable, because of the "Globalization & Liberalization".

The first article by Narayanan, MGS the well-known Historian, is entitled "Gods & Ancestors in Development". He concludes that the socio-economic system of Kerala has roots hidden in the remote past. "The belief that there is one path for Development, ... , has to be discarded.... Knowledge of the currents of history may help us to channelise its flow in certain ways, even though the mainstream defies our attempts to divert its course" (p 22). Satchidanandan, K, in "Everyday & Avant-Garde", adopts Lefebvre's vocabulary to review Malayalam Literature -the conclusion: "The polyphonic textuality of the new literature is possibly a product of this multi-dimensional engagement with a hydra-headed reality" (p 35). Ramakrishna, E.V., pursues the allegories of power in Malayalam fiction "From Region to Nation & Beyond". Rajeevan, B, on sexuality and formation of ‘modern subject’ in "From Caste to Sex", notes forms of resistance from women against male dominating ideological structures. Meera Velayudhan discourses on "Reform, Law & Gendered Identity", based on the study of social reform movement among the Ezhavas.

Rajan Gurukkal ("Development Experience of Colonial Keralam") surveys pre-colonial, colonial, and subsequent periods in the process of "epistemic shift". He overviews "four sites of the transformation of subject positions" and concludes that the "generative force behind the series of social and cultural developments ... was colonial modernity" (p 96). Raman Pillai retraces the Kerala Experience of "Coalition Politics": "Kerala has rightly been called the ‘political laboratory’ of India" (p 101). ‘Co-ordination Committees’ and ‘Liaison Committees’ of parties in coalition have taken up the role of the Cabinet of Ministers. Oommen analyses "Social Structure & Social Change", and suggests that there have been essential tensions between politics of equality and of identity. There is also a corresponding tension between the individual and the group as the objects of distributive justice, and often takes the form of caste vs. class.

Frank R.W. & Chasin B.H. try to answer the question: "Is the Kerala Model Sustainable?" They base their exploration on a sample village, fictitiously named "Nad(u)-ur" (= the ‘middle village’), in Central Kerala. They find confirmation for factors causing emergence of the economic pattern - ecological situation, egalitarian ethos, land reforms, universal acceptance and access to education, efficient public distribution system that made inequalities of paddy-based agriculture irrelevant, and "the combination of these several factors and their timing..." (p 131). They come to the crisis of the Model, and identify eight components, of which stagnation in agricultural production, escalation of prices, competition from in-migrant labour sources, sluggish industrial growth, increasing unemployment rates, fiscal crises, and environmental crises, play major roles. Concerns of redistribution that triggered the Kerala dynamics still remain. They advocate an acceleration of growth without sacrificing welfare gains and democratic achievements. They have seen in the People’s Planning campaign of the late 1990-s a presage and promise of the evolution of a new model of decentralized planning and implementation. Their summary is worth citing in full:

> "Is the Kerala Model sustainable? ... unchecked penetration by the forces of the New World Order will mean an answer 'no'. But perhaps the forces that created the old Kerala Model can be reinvigorated and can be directed into a new model in which the shortcomings of the old are addressed. And if sustainability becomes a conscious part of the new Kerala Model and a conscious element of planning and thinking ..., the New Kerala Model might just have a chance for success" (p 142).

[A hope, alas, belied at the start! The emphasis on decentralized planning and implementation was lost with a change of ruling "Coalition"; the old bureaucracies have been reinforced by new political patronages, and, by default, the economy of the State is conforming closely to the investment decisions of nationalist and international capitalist coalitions who are being unashamedly given the red-carpet treatment.]

Kurien C.T. continues investigation on the sustainability of the Model, and urges an "Industrial Revolution". Saradamoni K argues that the time has come for a 'rethinking'. Tharamangalam J explores the social roots of the "Debacle" - he identifies the problem as the preclusion by entrenched interests and political culture supporting strong vested interests of various sorts, especially in the "Education Business". This is associated with a cultural crisis, expressing itself as 'widespread cynicism about politics and a loss of faith in politicians' (p 193). There is also an erosion of collective purposes and commitment. Antia N.H. "The Social Path to Kerala's Health", concludes the first volume.

The second volume commences with a startling survey of "Long-Term Implications of Low Fertility in Kerala" by Irudaya Rajan & Zachariah.

> "In the last half a century, the major socio-economic problems were relating to the schooling, maintenance of health and nutrition, and finding employment to the youngsters. In the next half a century, the major socio-economic problems would be finding gainful employment to the older working age population maintenance of the health and nutrition of the elderly, and providing them with means of subsistence through social security and pension" (p 245).

Sukumaran Nair ("Labour Shortage in a Labour Surplus Economy?") studies the rural labour market. There is accentuated market segmentation and high costs, particularly in the agricultural sector, especially in paddy cultivation. There is no longer a 'peasant class' in Kerala; small holders seek other employments, and have non-agricultural sources of income. Shyamasundaran Nair (Resource Management for Sustainable Development of Keralam's Agriculture") opines that obsession of food self-sufficiency has lost its force; a holistic and integrated development of resources synchronizing technology packages, technology delivery,.access to inputs and services, and community action will make agriculture, not necessarily based on food crops, sustainable. But some of the old phobias tend to make land an asset and a safe investment rather than a productive resource, and adopts this 'realistic but uncomfortable prognosis' (p 278). Geevan C.P. argues for a coastal Zone Management Plan in "Kerala's Coastal Area". Thomas T.A. & Thomas J.A. study "Changing Agrarian Relations & Practices" with special reference to Kuttanad, the nursery of organized agrarian labour. Price factors and profitability, and the changes in landholding pattern have completed altered the labour surplus and exploitative conditions for which the region was historically notorious. Now, the few remaining cultivators suffer from labour shortage to such an extent that they are compelled to leave their fields fallow. They feel that the factors also militate against the future development of agriculture. Investment in agriculture will depend on the absence of non-agricultural opportunities. Their optimism regarding decentralized planning has been, since, falsified.

In a sumptuous article, Suryanarayan M.H. presents the contribution of the Public Distribution System to Food Security in Kerala. He found the system well targeted to the poorer sections, but limited to less than 50% of its potential clientele. Quality of the grains supplied could be improved, and economic access to the system by the poorest of the population could be improved. [But, subsequent trends have been almost diametrically opposite to these recommendations, the State and the Central Governments considering the system as a drain because of the subsidies involved. The recommendations of Global interests have tended to increase the prices of the supplies, and this relief to the poor is now becoming less and less effective.]

Varghese N.V. ("Access Versus Achievement") studies Primary Education; the finding is that, though there has been high enrollment and retention of students in primary schools, student performance has been poor - school level practices rather than facilities have been the determinant. There has to be better educational management. Gasper & Sebastian ("Cost

Sharing in Medical Education") find that there is a substantial element of subsidy in medical education, about 98.6% by 1985. Social equity has been poor - 67.6% of the students in the sample studied came from families with approximately Rs. 1,20,000/- income per year, over 40% with incomes about that figure. Ramankutty V ("Development of Kerala's Health Services") analyses the need for broadening the policy base. He cautions "unless the Government is also willing to put in place effective supervisory mechanisms, the system may ultimately end up with various imbalances and hazards" (p 443). Nayar K.R. considers 'another Kerala conundrum' in "Housing & Health". Housing and safe drinking water are important, but even an open source of water may be safe if it is exclusive to a family. The availability of exclusive latrines per family is also important.

Menon RVG ("Energy Planning") urges the need for a departure from the Kerala Model. The exclusive dependence on large hydroelectric projects that has been the feature of the State's experience has been largely to the interests of EHT consumers who run energy-intensive enterprises with little value addition, who oppose economic tariffs. Higher tariffs are necessary to ensure a better mix with thermal sources, and for improving the quality of the supply. Prasad M.N. outlines "An Objective Approach to Transport Development in Kerala. Ammu Joseph presents some less acknowledged facts about "Girls & Women in Kerala" - 'chronic devaluation' by familial pressures may make women tolerate high levels of exploitation; "... however subtle, gender-based discrimination and oppression in Kerala may be palpable enough to make girls feel that the very fact of getting away from family and community ... has a positive effect on their personalities as well as their social status" (p 489).

The concluding article by Thomas Isaac & Harilal, on "Democratization of the Planning Process" is a quick survey of the People's Campaign for decentralization of planning that dominated the scene for a few years from 1996, until the Left Coalition that initiated was voted out of power. Alas! It is one of the paradoxes of Kerala that this highly promising innovation, a landmark in People's Participation in Governance, did not ensure that the parties which innovated it while in government did not get re-elected to power in the next ensuing elections.

In a short review, it is not possible to critique each of the articles in detail. They are the result of deep study and research by the competent authors, and reflect not only technical competence but also emotional commitment to the progress of the State. Even contributors who are not natives of Kerala share this. The two volumes present a wealth of factual detail that would be difficult if not impossible to gather together elsewhere. The Editor deserves congratulations for selecting a wide compass of issues, and presenting the material attractively. Attractively bound in cloth, and with nice dust covers, the proof reading and book production have been excellent.

T. MADHAVA MENON

DRAVIDIAN ENCYCLOPAEDIA (Vol. 2)
V.I. Subramoniam (Ed.), Demy 1/4, pp. 926, Rs. 900/- (US$ 180/-)

A monumental volume on Dravidian people and culture, it has a compendium of new information. It contains 987 entries with maps, line drawings and photographs, 36 tables and 60 pages of index.

Short Review

TODA TEXTS. (Eds.) Nara Tsuyoshi & Peri Bhaskara Rao. 2002. Kyoto: ELPR Publications Series. Pp. 94.

I checked some of the Texts in Nara & Rao with those in Emeneau 1984. The stories are substantially the same, but there are quite a few, probably minor, differences. (In the following, I have not used any diacritical or pronunciation indicators).

1. *The Origin of the Gods*: Emeneau: 191 indicates a three-way classification of the Toda gods: those who were created of themselves, including Tokisy, On, and 'other gods'; and gods who were born as Toda, e.g., Kwaten, Ertn, Elnoxm, etc., and Toda, who, after death, became gods, transformed into mountains, and went away. The brother-sister relationships among them are not mentioned.

2. *On's passing to the world of the Dead*: The myths are substantially the same, but On's curse on the trees and the people of Pigors clan who did not participate in the send-off, is reported somewhat differently. Part of the difference may be due to the change in the transcription system. (passages 10-13 in 2 at Emeneau 191, contrast with 1.13 and 1.14 of Nara. Emeneau (192-193) remarked: "The two curses imposed by On seem to be in the language of song. Each is made up of two phrases of three syllables each, which may be regarded as song-units. The verb form *pocen* = 'I place, ordain' is a song form rather than a prose form. Moreover, *mux nas olk* 'for the people with beautiful faces' is not straight forward phraseology, whatever its reference. Rivers said that 'he and his people' were being cursed to die by Kurumba sorcery, but also said that all the Todas 'appear to have suffered for the evil deeds of Arasankutan'.

3. *Puf*: Puf (pyu.f in Emeneau's transcription) is reported to be On's son. But in Nara 1.19, he is described as "On's together born", i.e. brother. The story of his death, diving for the ring on his finger reflected in the water, is the same.

4. Some of the stories narrated briefly in Nara have been dealt with in much more detailed form in Emeneau, e.g., the story of Kwaten's long hair, and his affair with the celestial lady (Text 28, and 2, respectively).

5. Some of the stories relating to the Badaga, e.g., the adoption of the Badaga boy, do not appear in Emeneau.

6. Significantly, the voice recording is of the recitation by Ms Jeya Missie. The name indicates that she may be a Christian convert, probably with a 'convent education'. This, it is probable, might make her enunciation somewhat different from that of the normal Toda. Emeneau, on the other hand, used the versions as dictated by various probably senior informants, including one lady (who was herself a composer of songs).

7. I suggest we may request the authors (Nara & Rao) to let us have details of the background of the narrators whose voices they have recorded. Had they taken into account the "convent education background" of the converted Toda, which might make the enunciation somewhat stilted. (We know that Malayalam enunciation of some convent-educated Syrian Christian girls can give quite a wrong impression of spoken Malayalam!)

T. MADHAVA MENON

KERALA PAL̲AMA
T. Madhava Menon (Tr.)

Mr. T. Madhava Menon has translated Rev. Gundert's *Kerala Pal̲ama* ('Antiquity of Kerala') from Malayalam to English. The Dutch and Portuguese conflicts, the war between the kings of Calicut and Cochi, and several other informations are brought out in a clear and simple style.

Short Reviews

PRAKRIYA SARVASVAM BY NARAYANA BHATTA: A CRITICAL STUDY. S. Venkatasubramonia Iyer. 1972.

To review a treatise after thirty years is not common in the academic field. Certainly it is not, in India. The P.S. study which was Dr. V.S. Iyer's thesis, was accidentally looked at to find out details if any on Boppa Deva.

There was an undecided question whether Boppa Deva was from Maharashtra or from Bengal where his work is very popular. S.K. Chatterji once said in a lecture that B.D. only changed the technical terms of *Pāṇini* and produced a *Leghupāṇinīyam*-type of work. When Ms. Nairrita joined the Bengali Unit of ISDL, she was assigned the work of translating Boppa Deva.

S.V. Iyer's book, out of curiosity, was looked at. This has stimulating information on Boppa Deva and other non-*Pāṇinīyan* scholars including P.S., dominant in Kerala. Other works of Boppa Deva were listed by S.V. Iyer, which were not known to us earlier. S.V. Iyer's treatise is masterly and is the result of hard labour. P.S. should have been edited by him. He cites Sambasiva Sastri's incomplete edition. I was not happy with myself that I did not read the book of S.V. Iyer earlier. I have at least done this now. The work is a classic. Like all classics, importance is acquired as years advance. It is a publication of Kerala University and priced at Rs. 15/-. Whether it is available for purchase now is doubtful; good works are not reprinted in Kerala University, certainly not if it is in Sanskrit or any other language.

MUNDA SUBSTRATUM OF TIBETO-HIMALAYAN LANGUAGES. D.D. Sharma. 2003. New Delhi: Mital Publications. Rs. 250/-.

For the last two to three decades, D.D. Sharma has devoted his life in surveying the Tibeto-Burman and Austric languages of the Himalayan region. This tradition he took over from Siddheswara Varma. Indeed, D.D. Sharma stands foremost among Indian linguists to survey the lesser-known languages and getting them published. The volume under review is one.

In the introduction, Sharma has pointed out the Munda Substratum and possibly Dravidian also in the Himalayan region. Phonological and morphological affinities, pronominals, modifiers, counting system, verbs, temporal and aspectual affinities with a bibliography of important publications are the contents of this short but well-printed book.

The format of presentation is old. Language data from Dravidian have very few mistakes. A map of the languages found in the Himalayan region would have added weight to the publication. The Dravidian element is negligible and hence, cannot confirm or reject any survival of the Dravidian speakers in the Himalayan region. Dhanger/Jangar in Nepal, a Dravidian language, is one instance. But that may be far away from the northern Himalayan region. A map would have clarified the position.

SOURCE AND TIME. F. Grimal (Ed.). 1997. P.I.

Mainly on dating manuscripts and on editorial work. A few articles touching Linguistics are also found. Primarily Sanskrit-based, the volume is a miscellany touching several disciplines. A discussion on sentence and meaning is interesting and now outdated. *Spoṭha* is touched but only as a summary from various sources in Sanskrit.

The collection is based on papers submitted in 1977 which against our expectation, is not confined the editorial work.

In India, some masters like Suktankar for Mahabharatha, have a detailed analysis of the editorial aspect. Hardly any improvement is suggested in any of the articles.

The use of computer will simplify editorial work. In India, this powerful instrument has to play a major role in editorial work.

The seminar was less known in India though several scholars in India could have added their experience in editorial work with expertise.

Beautifully produced, unpriced and secured by ISDL for exchange.

V.I. SUBRAMONIAM

Short Review

BRAIN AND PERCEPTION: HOLONOMY AND STRUCTURE IN FIGURAL PROCESSING. Karl H. Pribram. 1991. New Jersey: Lawrence Erlbaum Associates. Pp. 423.

There is no doubt that the brain stores linguistic information neither in terms of grammatical categories nor in terms of phoneme, morpheme etc. Knowledge about language is stored in terms of ionic distribution which is embedded in a gross neuro-anatomical substance. For each and every linguistic phenomenon, there is a corresponding ionic state, which is again connected with different conceptual ionic states, forming a complex continuum. Any type of information - be it logical, emotional, factual, frictional, etc. - can be impressed in this continuum. To enhance this assumption, I would like to refer to Fourier Theorem which states that any pattern can be analyzed into a set of regular, periodic oscillations differing only in frequency, amplitude and phase. Fourier transform of such a pattern is described as a spectrum (component of sound or other phenomenon arranged according to frequency, energy, etc.) composed of coefficients representing amplitudes of intersection of sine and cosine components of various frequencies present in the pattern. This spectrum includes the concept of space and time.

What we denote as a sensory image is nothing but exposition of the underlying complex neuro-physiological activity. The structural aspect of human cognition belongs to that image but it need not necessarily be applicable to the objective world. Because objective world is in continuity, brain is not an exception to this; so, it is better to denounce the theory of localization. Broca's localization theory had faced a severe threat when it was discovered that most left-handed aphasic patients who had lesion in the right hemisphere, would shift cerebral dominance from left to right hemisphere. This is why Broca's approach for localization becomes a self-denial.

Nothing is localized. Everything is in close association with its surroundings. "Objects are not fleeting and fugitive appearances (images) because they are not only groups of sensations but also groups cemented by a constant bond. It is this bond alone which is the object in itself, and bond is a relation." (Poincare, 1905). Even the meaning of a so-called isolated word is closely associated with surroundings, thus forming a semantic network. As a member of this semantic network, it reflects the reality of the **part** as well as the **whole**. This multiple modality-specific association shows that the language area of brain must be a relatively undifferentiated region.

SAMIR KARMAKAR

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THE FUNDAMENTALS OF MANUSCRIPTOLOGY
P. Visalakshy

This book covers manuscriptology, writing material, scribe and writing language, and script, etc., with an year-conversion as an appendix. Dr. Laddu of Poona observes in his introduction, "compact introduction and presented in a simple language". Price Rs. 150/- and paper-bound.

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IRAVATHAM MAHADEVAN (b. 1930) is a specialist in Indian epigraphy, especially in the fields of Indus and Brahmi scripts. He was awarded the Jawaharlal Nehru Fellowship in 1970 for his research on the Indus script, and the National Fellowship of the Indian Council of Historical Research in 1992 for his work on the Tamil-Brahmi inscriptions.

His book, **The Indus script: Texts, Concordance and Tables** (1977) is recognized internationally as a major source book for research in the Indus script. He has also published **Corpus of the Tamil-Brahmi Inscriptions 1966** (1968) besides numerous papers on several aspects of the Indus and Tamil-Brahmi scripts.

He has served as the Co-ordinator, International Association of Tamil Research, for ten years (1980-90). He was elected the President of the Annual Congress of the Epigraphical Society of India in 1998 and the General President of the Indian History Congress for its session in 2001. He served the Indian Administrative Service and retired voluntarily to devote himself to full-time academic pursuits. He lives in Chennai.

For further information

Cre-A:
New No. 2, 24th East Street
Thiruvanmiyur
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